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ABSTRACT

Projects funded during the first year of operation of the National Workplace Literacy Program were examined. Activities included a review of research literature, analyses of data from 29 of the 37 first-year projects, and site visits to 6 projects. The research literature suggested the following elements of successful workplace literacy programs: a close and collaborative relationship between workplace literacy partners; employee involvement; a literacy task analysis; clear and objective program goals; linking of workplace literacy instruction with job tasks; and instructors with experience teaching adults. Information from site visits identified four components associated with effective workplace literacy projects: (1) active involvement by project partners, such as businesses and unions, in project planning, design, and operation; (2) active and ongoing employee involvement in conducting literacy task analyses and determining worker literacy levels; (3) systematic analysis of on-the-job literacy requirements; and (4) development of instructional materials related to literacy skills required on the job. Five recommendations to improve program effectiveness were offered: (1) require workplace literacy projects to collect data; (2) lengthen the grant period; (3) develop procedures for disseminating information about successful projects; (4) require projects to evaluate effectiveness; and (5) support development of instruments to assess participant literacy levels geared for the workplace. (Appendixes include 88 references and project data.) (YLB)

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A REVIEW OF THE NATIONAL WORKPLACE LITERACY PROGRAM

May 1991

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A REVIEW OF THE NATIONAL WORKPLACE LITERACY PROGRAM

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A REVIEW OF THE NATIONAL WORKPLACE LITERACY PROGRAM

EXECUTIVE SUMMARY

The National Workplace Literacy Program (NWLP), administered by the U.S. Department of Education (ED), provides financial support to workplace literacy demonstration projects operated by partnerships of businesses, labor organizations, and educational organizations. The NWLP was authorized by the Stafford-Hawkins Elementary and Secondary School Improvement Act of 1988 (P.L. 100-297) in response to concerns that an increasing percentage of the nation's labor force possesses insufficient basic skills and that this situation was adversely affecting productivity and competitiveness in the world marketplace. The program represents the major source of Federal funding for workplace literacy projects.

Services provided through the NWLP's workplace literacy projects include basic skills and English-as-a-second-language instruction; adult secondary education; training to upgrade workers' skills and improve their competencies in speaking, listening, reasoning, and problem solving; and support services such as counseling, transportation assistance, and child care.

Thirty-seven projects were funded in the program's first year (FY 1988), and 39 projects were funded in FY 1989. Funding for the NWLP has more than doubled during the program's first four years -- from $9.6 million in FY 1988 to $19.3 million for FY 1991. If program appropriations reach $50 million, the NWLP will become a state grant program with funds distributed through the states on a formula basis, rather than directly to local projects by the Federal Government on a competitive basis.

This examination of projects funded during the NWLP's first year of operation -- including a review of the research literature, analyses of data from 29 of the 37 projects, and site visits to six projects -- provides information that:

- Identifies key components associated with effective workplace literacy projects; and
- Recommends ways to improve program effectiveness.

Components Associated with Effective Workplace Literacy Projects

Based on the information from site visits to six projects identified by ED staff as effective, and on the research literature, four components that appear to be associated with effective workplace literacy projects have been identified. However, empirical data to document that these components are essential for project success are not available.

Active Involvement by Project Partners Such as Businesses and Unions in Planning, Designing, and Operating the Project

Business and labor union partners at the study sites are generally supportive of and actively involved with workplace literacy projects. Project partners typically provide space for classrooms, monitor program services, and provide financial support for program services. This type of involvement is supported by the research literature. Involvement by businesses at the study sites consists of two areas: upper management and on-line supervisors.

Active and Ongoing Involvement by Employees in Conducting Literacy Task Analyses and Determining Worker Literacy Levels

Employees at the study sites have generally been involved with the workplace literacy projects in a variety of ways. These include planning the project, conducting literacy task analyses, determining the literacy needs of workers, and participating (in several study sites) on advisory panels. The active and ongoing involvement by employees who are potential participants in the project is cited in the research as an important component associated with project success.

Systematically Analyzing On-the-Job Literacy Requirements

Systematic analyses of on-the-job literacy requirements are known as literacy task analyses and include analyzing specific job responsibilities, skills required to accomplish the job, and written job materials. Some type of literacy task analysis was conducted at most of the study sites, although only one site conducted what was considered to be a formal literacy task analysis. Information from these analyses has been used at the study sites to inform the design of instructional services.

This activity is supported by the research which indicates that analyzing the literacy requirements of jobs is an essential component of workplace literacy projects. Such analyses inform the content of instructional services, the design of instructional materials, and the measures for assessing improved participant literacy levels. Concerns that the costs of conducting literacy task analyses may be prohibitive for small businesses are cited in the research.

Developing Instructional Materials Related to Literacy Skills Required on the Job

At all study sites, at least some of the instructional materials are related to job literacy requirements. Such materials include corporate manuals and instructions for operating machinery and other equipment. This is also true at sites that have not conducted a literacy task analysis at the beginning of the project.

The research literature emphasizes the importance of using instructional materials that are related to literacy skills required on the job. These literacy skills may be specifically related to individual jobs, or to almost any skill that is required to successfully perform the job.

Recommendations for Improving Program Effectiveness

The focus of this study has been on the projects funded during the NWLP's first year. The first year of any program is a difficult one with new procedures being developed and implemented. Start-up for the NWLP was further complicated by the short period between program planning and design, and operation. Yet information from the first-year projects indicates that the NWLP has been successful in many areas. For example, the overall number of participants at projects exceeded the number of participants that these projects expected to serve at the outset of the grant. The projects visited during this study contain many components that research studies indicate are associated with effective projects.

Five recommendations are offered to improve program effectiveness.

Require Workplace Literacy Projects to Collect Data

The National Workplace Literacy Program has few data collection requirements. Projects are not required to submit quarterly progress reports that provide data about participants and services. There are, however, at least three reasons why it is important for the Office of Vocational and Adult Education (OVAE) to collect data from workplace literacy projects. First, without data, OVAE staff are handicapped in providing sufficient technical assistance. Second, as a demonstration program, the NWLP projects need data to document promising practices or models that might benefit other workplace literacy projects. Third, projects need to have data documenting project success in order to convince businesses of the value of providing financial support when Federal funding ends.

Lengthen the Grant Period

First-year NWLP projects were funded for 15 months and subsequent grants have been funded for a period of 18 months. Both time periods include a three-month start-up period. It is important to consider lengthening the grant period for the NWLP projects for two reasons.

First, activities required for successful workplace literacy projects are time-consuming as well as potentially expensive. Projects need to determine the literacy requirements of specific jobs through observing workers on the job, interviewing workers and supervisors, and reviewing work materials. Also, instructional materials and assessment instruments appropriate to specific job tasks need to be developed.

Second, the NWLP grants are for demonstration projects that might serve as examples for other workplace literacy projects. A 15- or 18-month time period may not be sufficient for projects to obtain sufficient data to document project success that would benefit other workplace literacy projects or help convince businesses to provide financial support when Federal funding ends.

Develop Procedures for Disseminating Information about Successful Projects

The NWLP is the major Federal funding source of workplace literacy projects. NWLP projects provide valuable information for other workplace literacy projects to draw upon in

designing and operating their services. It is important, therefore, to develop procedures to systematically disseminate information about successful projects.

Although workplace literacy projects should customize instructional materials and assessment instruments for the specific requirements of the job, there is likely to be some portion of these materials and instruments that could benefit other projects serving similar jobs, involving similar partners and educational providers.

Require Projects to Evaluate Effectiveness

As previously mentioned, empirical data are needed to document promising practices or models that might benefit other workplace literacy projects and help convince businesses to provide financial support when Federal funding ends. The NWLP projects should be required to evaluate the effectiveness of their services. An evaluation of the NWLP can be designed in tandem with data collection requirements for the projects.

In addition to the usual issues addressed in an evaluation (i.e., impact of project services on participant literacy skills), information from the site visits and research literature suggests additional issues that need to be addressed in an evaluation of the NWLP:

- **Essential elements of conducting a literacy task analysis**. Data are not available to determine whether it is necessary to conduct a formal literacy task analysis. These can be quite expensive and it may not be realistic for many small businesses and non-profit organizations to have such resources. It is important, therefore, to determine the essential elements of literacy task analyses that even less formal analyses must include.

- **Appropriate length of instructional services**. With limited resources, workplace literacy projects may have to choose between providing a larger number of service hours or serving a larger number of participants. To address this dilemma, it would be important to know how many hours of workplace literacy instruction are required for participant literacy levels to improve.

- **Influence on participant retention of support services, and monetary and other incentives to participants**. Two sets of project activities that might influence participant retention are the availability of support services such as child care, education counseling, and transportation reimbursement, and monetary incentives. Yet empirical data are not available to document that support services and monetary incentives promote retention.

Support the Development of Instruments to Assess Participant Literacy Levels That are Geared for the Workplace

Standardized academic-based tests are used at most study sites to measure participant literacy levels and may also be used to evaluate projects. A systematic effort to develop instruments geared for the workplace that assess participant literacy levels needs to be undertaken.

Tests typically used at the study sites and also identified in the research as frequently used by workplace literacy projects include the Tests of Adult Basic Education (TABE), the Adult Basic Learning Examination (ABLE), and the Wide Range Achievement Test (WRAT). Staff at a number of study sites and the research literature are concerned about the appropriateness of using standardized instruments for assessing literacy levels of participants. However, workplace literacy projects have almost no alternatives, since instruments designed specifically for the workplace generally do not exist. As one project director at a study site notes: "Measurement of participant progress is one of the toughest things we have grappled with."

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CHAPTER 1

INTRODUCTION AND OVERVIEW

Concerns that the United States is losing its competitive edge because American workers lack the educational and job skills necessary to compete in a global economy have become widespread in recent years.[1] Yet basic skills or remedial training offered by American businesses are limited. A 1989 survey by Training magazine found that about 11 percent of responding firms sponsored remedial or basic education, such as reading, writing, or arithmetic, and basic education for people with a limited proficiency in English (Lee, 1989). Of the $210 billion businesses spent on all levels of training in 1985, it has been estimated that as little as one percent went to basic skills training (Collino et al., 1988; Kearns, 1986).

The National Workplace Literacy Program (NWLP), administered by the U.S. Department of Education (ED), is designed to provide financial support to workplace literacy demonstration projects operated by partnerships of businesses, labor, and educational organizations. The Congress has indicated that job training should be included as part of the nation's adult education agenda by assigning responsibility for the NWLP to ED, and including its legislative authorization within the Adult Education Act (AEA). Enactment of this program, however, also suggests that Congress believes that adult basic education (ABE), English-as-a-second-language (ESL), and Adult Secondary Education (ASE) programs supported by AEA and state and local funds are not sufficiently focused to address the problems of workplace literacy, and that instructional services beyond traditional educational settings are required to provide American businesses with an adequately trained work force.

The National Workplace Literacy Program

The NWLP was authorized by the Stafford-Hawkins School Improvement Act of 1988 (P.L. 100-297) in response to concerns that an increasing percentage of the nation's labor force possessed insufficient basic skills and that this situation was adversely affecting productivity and competitiveness in the world marketplace. This statute marks the first time that AEA funding has been designated for demonstration partnerships between businesses and education groups.

Thirty-seven projects were funded in the program's first year, fiscal year (FY) 1988, and 39 projects were funded in FY 1989. (See Figure 1-1.) First-year grants were awarded for 15 months, including a three-month start-up period. Second-year grants were for 18 months and also included a three-month start-up period.

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[1] Estimates of the costs of illiteracy to businesses vary. In a report on the economy in eight southeastern United States, the U.S. Department of Labor found that the region's estimated 12.1 million functionally illiterate adults cost the Southeast economy approximately $57.2 billion per year in lost business, productivity, unrealized tax revenues, welfare costs, and costs associated with crime and related social problems (U.S. Department of Labor, 1988b; Mendel, 1988). Other national estimates indicate that productivity losses, from both the shortcomings of poorly educated workers and costs of retraining, cost businesses anywhere from $10 billion to about $25 billion annually.

FIGURE 1-1

The National Workplace Literacy Program
First-Year Projects

State	Grantee	Grant Award
Arizona	Pima County Adult Education	$ 72,666
California	Association of Cultural & Social Advancement for Vietnamese, Inc. (ACSAV)	168,200
	Los Angeles Unified School District	428,528
Connecticut	Greater Waterbury Private Industry Council	310,516
District of Columbia	International Bricklayers Union International Masonry Institute Training and Apprenticeship	395,803
Florida	Dade County Public Schools	319,158
	Orange County Public Schools	298,205
Georgia	Georgia Southern College	441,139
	Georgia State University	139,330
Hawaii	University of Hawaii at Manoa, College of Education	189,056
Idaho	Consortium of Area Vocational Education Schools (CAVES)	292,000
Illinois	Northwest Educational Cooperative	133,371
	Triton College	308,227
	Waubonsee Community College	68,559
Kentucky	Eastern Kentucky University	259,154
Maryland	Maryland State Department of Education; Metropolitan Baltimore AFL-CIO	303,023
	Prince George's County Board of Education	77,011

(Source: U.S. Department of Education)

FIGURE 1-1 (Continued)

The National Workplace Literacy Program
First-Year Projects

State	Grantee	Grant Award
Massachusetts	Cambodian Mutual Assistance Association	34,140
	Community Action, Inc.	66,011
	Continuing Education Institute	255,720
	Massachusetts Workplace Education Initiative, Department of Education	594,262
	Roxbury Community College	320,081
Michigan	Carman-Ainsworth Community Schools	299,745
Minnesota	Hennepin-Carver-Scott Service Delivery Area, Hennepin County Training & Employment Assistance	221,426
Mississippi	Mississippi Department of Education	374,809
New Jersey	State of New Jersey	325,000
New York	Long Island University	275,220
North Carolina	Fayetteville Technical Community College	260,224
Ohio	Opportunities Industrialization Center of Clark County	56,521
Pennsylvania	Pennsylvania Department of Education	435,188
Tennessee	Maury County Schools	47,079
Texas	Houston Community College System	296,721
Virginia	Arlington Public Schools/REEP Program	258,369
	James Madison University	312,785
Washington	Seattle King County Private Industry Council	171,289
West Virginia	West Virginia Northern Community College	272,795
Wisconsin	Wisconsin Board of Vocational, Technical, and Adult Education	393,569

(Source: U.S. Department of Education)

The NWLP offers grants for workplace literacy partnerships between business, industry, labor organizations or private industry councils and state educational agencies, local educational agencies, institutions of higher education, or schools, including area vocational schools, employment and training agencies, and community-based organizations. The first-year projects involve business partners representing the various industries including manufacturing (40 percent of the projects), electronics (32 percent), health care facilities (15 percent), hotel services (8 percent), and other (5 percent). Union organizations were partners at 27 percent of the projects.

The types of workplace services that may be provided in these partnerships are:

- Adult literacy and other basic skills services;
- Adult secondary education services leading to completion of a high school diploma or its equivalent;
- Programs that serve adults with limited English proficiency;
- Upgrading or updating basic skills of adult workers as needed for changes in workplace technology;
- Improving competencies of adult workers in the areas of speaking, listening, reasoning, and problem solving; and
- Providing education counseling, transportation, and child care for workers while they participate in workplace programs.

Program regulations indicate that services should be targeted to "adults with inadequate basic skills for whom the training described will mean new employment, continued employment, career advancement, or increased productivity" (34 CFR 432.22). Grants may be used to pay for up to 70 percent of the project costs, with the remaining 30 percent from non-Federal funding sources, as well as through in-kind contributions.

Funds are distributed through discretionary grants made by the Federal Government directly to local projects. Decisions about selecting grantees are based on several criteria. For example, projects should:

- Demonstrate a strong relationship between skills taught and literacy requirements of jobs;
- Be targeted to adults with inadequate skills. For these individuals, training is supposed to bring new or continued employment, career advancement, or increased productivity;
- Include support services; and
- Demonstrate the active commitment of all partners to accomplishing project goals (34 CFR 432.22).

The workplace literacy grants were authorized at $30 million in FY 1988, $31.5 million in FY 1989, and "such sums as may be necessary" for FY 1990-93. Actual appropriations were $9.6 million in FY 1988, $11.9 million in FY 1989, $19.7 million for FY 1990 and $19.3 million in FY 1991. If and when program appropriations reach $50 million, the NWLP will become a state grant program.

Other Efforts to Promote Workplace Literacy

In addition to ED's NWLP, the U.S. Department of Labor (DOL) provides some funding for workplace literacy activities. The states are another source of funding for workplace literacy projects.

Department of Labor Workplace Literacy Initiatives

DOL's workplace literacy activities consist of grants competitions through which a series of workplace literacy demonstration projects have been funded. Between July 1, 1989 and June 30, 1990, DOL distributed approximately $13 million for workplace literacy projects. For the year beginning July 1, 1990, DOL conducted a field-initiated grants competition that identified workplace literacy as an area of major interest and distributed approximately $6 million for workplace literacy.

Workplace Literacy Initiatives in Six States

It is useful to determine the level of interest and commitment states have toward workplace literacy because the NWLP will become a state grant program if and when appropriations reach $50 million. Some states are very active in providing ABE and ESL services and may also support workplace literacy activities with their non-Federal funds. Data about state workplace literacy initiatives were obtained from the six states where site visits to projects were conducted: Georgia, Maryland, Massachusetts, Minnesota, North Carolina, and Virginia.

Three of the six states -- Massachusetts, Virginia, and Minnesota -- support workplace literacy activities. Massachusetts and Virginia have operated a state grant program in support of workplace literacy. In FY 1990, various Massachusetts state agencies contributed a total of $343,000 for grants to individual workplace literacy projects of up to $50,000 each. In its 1988-90 budget, Virginia set aside for workplace literacy $384,000 of the $4.4 million allocated for adult literacy services from Federal, state, and local sources. These funds have been awarded to local projects on a competitive basis and grantees were required to match the state contribution.[2]

Minnesota does not provide funding for local workplace literacy projects. For the two-year period ending June 1990, Minnesota appropriated a total of $50,000 to support a statewide workplace literacy resource center, a conference on successful workplace literacy models, and a two-day training session with follow-up technical assistance for local workplace literacy projects over the subsequent 15 months.

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[2] Beginning in July 1990, Virginia changed its workplace literacy initiative from the grants competition to providing technical assistance through four Employment Development Directors (EDDs) who serve as a resource for organizations interested in establishing workplace literacy projects. Virginia has set aside approximately $300,000 per year for the EDDs.

Three of the six states -- Georgia, Maryland, and North Carolina -- do not specifically support workplace literacy projects. In Georgia and North Carolina, however, some state funds are used for projects operated through the AEA basic state grant component. Also in Georgia, eight percent of Job Training Partnership Act funds are spent on adult education programs, some of which have a workplace literacy component. Workplace literacy projects in Maryland are funded primarily through county offices and private contracts rather than through the state department of education.

Purpose of the Study

This examination of projects funded during the NWLP's first year of operation -- including a review of the research literature, analyses of data from 29 of the 37 first-year projects, and site visits to six projects -- provides information that identifies key components of effective workplace literacy projects, and recommends ways to improve program effectiveness.[3]

To accomplish these goals, the study addresses the following broad research questions:

1. What is the nature of the relationship between the educational service provider and the business and/or union partner?

2. What type of needs assessment and literacy task analysis was conducted prior to the development of the curriculum?

3. How does the curriculum meet the needs of the specific work force environment?

4. What instructional and support services are offered?

5. How are participants recruited and retained?

6. How are project outcomes evaluated?

7. How do projects staff and train teachers and volunteers?

Methodology

Activities conducted to address the research questions were: a review of relevant literature, a review of the data files of projects funded in FY 1988, telephone conversations with project directors, site visits to six NWLP projects, telephone interviews with state education and labor officials to learn about state workplace literacy initiatives, and a review of extant data from the first-year projects.

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[3] Specific data presented in this chapter and the appendix may be for fewer than 29 projects because the projects did not necessarily provide all requested data.

Literature Review

The review concentrates on research studies, policy papers, journals, and manuals that describe the administration and operation of workplace literacy projects and the services these programs provide. The literature provides a context for understanding the issues related to workplace literacy projects and a framework for developing the data collection protocols used to collect information from projects during the site visits.

Review of Data Files of First-Year 1988 Projects

The review of data files was conducted to obtain detailed descriptions of specific project activities, including needs assessments, project objectives, curriculum and instructional strategies, and program evaluation activities. This information was used in selecting the projects for site visits. Data sources from project files included in the review were project abstracts and proposals, and voluntary quarterly reports.

Conversations with Project Directors

Telephone conversations were conducted with project directors in each of the first-year 1988 projects to obtain additional data prior to the selection of "effective" projects for site visits. The conversations focused on project enrollment, participant achievement, retention rates, curriculum offerings, and the nature and extent of the business/union role in developing and operating the program. This information was one source for selecting the six projects for site visits.

Site Visits

Six workplace literacy projects were selected for site visits; of these, we chose 13 businesses and nine education provider sites.[4] Initially, "exemplary" sites were to be selected based on such quantifiable data as pre- and post-test performance data and documentation of improved productivity. However, project directors and the literature indicated that standardized testing data often are not an appropriate measure of participants' achievement in workplace literacy projects. Also, in many cases such data were unavailable. Furthermore, the projects did not have quantifiable data (e.g., measures of increased productivity) to document success.

The six projects selected for site visits were therefore based on two other criteria: (1) the Office of Vocational and Adult Education's (OVAE) recommendations of effective projects based on experiences of program monitors; and (2) high participant retention rates as reported by project directors. The six sites were selected to reflect variation in the following factors:

- Types of educational service providers (i.e., state departments of education, school districts, community colleges, universities);
- Types of business partners (i.e., small and large businesses, manufacturing and service sector businesses);
- Union involvement;

[4] All education and business sites at the six projects were not necessarily visited.

- Presence of an ESL component; and
- Presence of functional context literacy training.

Figure 1-2 presents the sites and some of their key elements.

The projects visited were:

- **Grady Memorial Hospital Job Skills Enhancement Program**, a partnership between the Center for the Study of Adult Literacy at Georgia State University and Grady Memorial Hospital in Atlanta. The project provides workplace literacy instruction for hospital workers in the housekeeping, laundry, and food service departments. A formal literacy task analyses was conducted. Classes are held twice per week for 36 weeks at the hospital on job time. The curriculum has been developed using materials and information gathered during a formal literacy task analysis. Reading, writing, oral communication, and problem-solving are taught through actual job materials and simulations.

- **LEAP -- The Labor Education Achievement Program**, a partnership between the Maryland State Department of Education, the Metropolitan Baltimore Council of AFL-CIO Unions, and local ABE providers. Its aim is to develop classes for union workers in the steel, garment, hotel and restaurant, food packaging, and hospital industries in the Baltimore metropolitan area, and in state, county, and city governments. Service providers include three public school systems and four community colleges. Classes involve basic literacy for workers functioning below a high school ability level, English for speakers of other languages, GED preparation, and communication and problem-solving skills. In addition to instructional services that are provided either on-site or at union halls, stipends for child care and transportation are also provided.

- **Workplace Education Project**, a partnership coordinated by the Massachusetts Workplace Education Initiative of the Massachusetts Department of Education, which involves seven distinct workplace education partnerships. The types of classes that are provided depend on the needs identified at each of the work sites. Work-related instruction ranges from basic English, reading, writing, and math for workers in entry level jobs, to ESL, ABE, and GED.

- **DIRECTIONS**, a partnership between Normandale Community College in Bloomington, Minnesota and the Hennepin-Carver-Scott Service Delivery Area/Private Industry Council for small businesses. The project focuses on improved productivity at approximately 40 small businesses. The initial goal was to operate literacy training programs through a consortium of small businesses. Approximately half of the participants are in ESL classes. GED instruction is offered in addition to ESL.

- **Fayetteville Technical Community College** in North Carolina, a program with more than a dozen industries including Black & Decker, FASCO Industries, Inc., and Crowell Constructors. Participants receive instruction in one of the following areas: ABE, GED, ESL, and shop skills math. Instruction is provided on-site for most companies.

FIGURE 1-2

KEY ELEMENTS OF STUDY SITES

Project	Grant	Education Providers	Partners	Type of Instructional Services	Other Relevant Information
Grady Memorial Hospital Job Skills Enhancement Program (JSEP) -- Georgia	$139,330	Georgia State University	Grady Memorial Hospital	Basic problem-solving, oral communication and computational skills for entry level workers and those considered for promotion.	Conducted formal literacy task analyses
Labor Education Achievement Program (LEAP) -- Maryland	$303,023	Maryland State Department of Education	Metropolitan Baltimore Council of AFL-CIO	Workplace and basic skills leading to GED	Strong union involvement
Workplace Education Program (WEP) -- Massachusetts	$594,262	Massachusetts State Department of Education; various institutions including community colleges, public schools, and community-based organizations	Various businesses; mostly manufacturers and one nursing home	Basic reading, writing, and mathematics; ESL at a number of sites	Umbrella grant through the Massachusetts State Department of Education
DIRECTIONS -- Minnesota	$221,426	Normandale Community College	Hennepin-Carver-Scott Service Delivery Area/Private Industry Council; small businesses	GED; ESL to improve communications and assist in advancement	Planned as a consortium of small businesses
Fayetteville Technical Community College -- North Carolina	$260,224	Fayetteville Technical Community College	Various manufacturing concerns	GED; ESL	--
Arlington Education and Employment Program (REEP) -- Virginia	$258,369	Arlington County Public Schools	Six hotels in Arlington County	ESL	Project viewed as a recruitment technique to attract workers to participating hotels

- **REEP -- Arlington Education and Employment Project**, a partnership between the Arlington, Virginia public schools and six area hotels. The Arlington Chamber of Commerce is also involved with the project. The project provides ESL instruction in basic skills related to three industry departments: housekeeping, food and beverage, and maintenance.

Each site visit was conducted over two days. During this time interviews were conducted with staff from the education, business, and labor partners, including the director responsible for the overall project, the project coordinator or assistant director responsible for the daily operations, and at least two business personnel -- usually a member of top management responsible for initiating the program, a member of the human resources development staff, and a supervisor involved more directly with ongoing operations. If a union participated in the project, union representatives responsible for the project were also interviewed.

Respondents were asked to describe the nature and extent of their involvement in organizing and implementing the project, the needs assessment and literacy analysis, procedures for recruiting and retaining trainees, the content of the curriculum and the type of instructional services offered, evaluation procedures, and the recruitment and training of teachers.

Telephone Interviews with State Officials Responsible for Workplace Literacy Projects

Telephone interviews with staff from state departments of education and labor were conducted to identify state workplace literacy initiatives. This activity was conducted because of the statutory provisions that authorize a state grant program to replace the discretionary grant program if and when appropriations reach $50 million.

Review of Extant Data from First-Year Projects

Data from voluntary quarterly progress reports submitted by the first-year projects to OVAE provide some descriptive information about the NWLP. Data from these reports were aggregated and sent to the projects for verification. Twenty-nine of the 37 projects (78%) verified at least some of the data.

A Descriptive Overview of the First-Year Projects

In this section, data are presented from the responding first-year projects on the amount of the NWLP grant and characteristics of project participants, including their gender, age, educational placement level, and years of employment. These data have been summarized as a series of bullets since they are generally straightforward and do not lend themselves to extensive analyses. Although these data are quite limited, they do provide an indication of how well projects met their target number of participants, as well as an overview of some key characteristics of participants.

The NWLP Grant

- NWLP grants to the 37 first-year projects ranged from $34,140 for the Cambodian Mutual Assistance Association to $594,262 for the Massachusetts Workplace Education Initiative. Both projects are in Massachusetts. (See Figure 1-1).

The NWLP Participants

- Data on the number of participants served were provided by 27 of the 37 first-year projects which accounted for 65 percent ($6.3 million) of the NWLP's appropriations. These 27 projects provided services to 13,545 participants, 1,085 more participants (8.7%) than they expected to serve when the grants were awarded. (See Figure 1-3.)

- Fourteen projects served more participants than initially planned. Among the projects serving substantially more participants are the Greater Waterbury PIC in Connecticut (+428), CAVES in Idaho (+748), and Fayetteville Technical Community College in North Carolina (+279). (See Figure 1-3.)

- Participants at the 27 projects providing data were almost equally divided between males (6,565; 48%) and females (7,043; 52%).[5] Females were in the majority at 19 of the projects. (See Appendix A.)

- Almost 60 percent of the participants were between the ages of 25 and 44, 25 percent were between 45 and 49, 12 percent were between 16 and 24, and the age of 2 percent was unknown. (See Appendix A.)

- Almost one-third of the participants have been employed at the business site for between one and five years, 22 percent have been employed for less than one year, 14 percent have been employed between six and 10 years, 9 percent between 11 and 15 years, 7 percent between 16 and 20 years, 5 percent more than 20 years, and the length of employment for 11 percent was unknown. (See Appendix A.)

- Overall, 46 percent of the participants were White, 24 percent were Hispanic, 20 percent were Black, 9 percent were Asian, and one percent was Native American. (See Appendix A.)

- The racial distribution was different for Level 1 and Level 2 services. At Level 1, Hispanics accounted for 37 percent of the participants, Blacks for 27 percent, and Whites for 24 percent. However, at Level 2, Whites accounted for 64 percent of participants with Blacks accounting for 14 percent and Hispanics for 13 percent of participants.[6]

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[5] Data on gender were not provided for 396 participants.

[6] Level 1 participants are individuals who have either completed or are functioning at the equivalent of grades 0-8, and Level 2 is the equivalent of grades 9-12.

FIGURE 1-3

Number of Participants at First-Year Workplace Literacy Projects*

WORKPLACE LITERACY PROJECTS, FY 1988	ACTUAL PARTICIPANTS	PLANNED PARTICIPANTS	DIFFERENCE BETWEEN ACTUAL/PLANNED PARTICIPANTS
Arizona			
Pima County Adult Education	161	160	1
California			
Los Angeles Unified School District	584	660	-76
Connecticut			
Greater Waterbury PIC	648	220	428
Florida			
Orange County Public Schools	1,239	1,000	239
Georgia			
Georgia State University	66	120	-54
Hawaii			
University of Hawaii at Manoa	338	420	-82
Idaho			
CAVES	1,348	600	748
Illinois			
Northwest Educational Cooperative	323	350	-27
Triton College	816	900	-84
Waubonsee Community College	272	288	-16
Kentucky			
Eastern Kentucky University	175	150	25
Maryland			
MD State Dept. ED/Metro.Balt.AFL-CIO	674	500	174
Prince George's County Board of ED	397	240	157
Massachusetts			
Cambodian Mutual Assistance Assoc.	58	32	26
Community Action, Inc.	70	40	30
Continuing Education Institute	108	100	8
MA Workplace Education Initiative	628	575	53
New Jersey			
State of New Jersey	921	1,000	-79
New York			
Long Island University	459	325	134
North Carolina			
Fayetteville Technical Comm. College	679	400	279
Pennsylvania			
PA Department of Education	68	300	-232
Tennessee			
Maury County Schools	152	100	52
Texas			
Houston Community College	357	400	-43
Virginia			
Arlington Public Schools/REEP Program	231	400	-169
James Madison University	164	180	-16
Washington			
Seattle King County PIC	150	150	0
West Virginia			
WV Northern Community College	2,459	2,850	-391
TOTAL	13,545	12,460	1,085

*Twenty-seven of the 37 first-year projects responded.

Report Organization

The remainder of this report contains three chapters. Chapter 2 reviews the research literature on issues related to the operation and services of workplace literacy projects. The third chapter summarizes the study findings from the site visits and responds to the study's research questions. The fourth and final chapter presents the study's conclusions.

CHAPTER 2

RESEARCH FINDINGS ON ELEMENTS OF EFFECTIVE WORKPLACE LITERACY PROJECTS

Research on workplace literacy is quite limited as workplace literacy is a fairly new field. Empirical data identifying program components or procedures associated with effective services, especially improved on-the-job performance and gains in basic skills, are not yet available. However, the current body of workplace literacy research, although mostly descriptive, presents a picture of how workplace literacy services are organized and delivered.

This review is organized around six topical areas: an overview of the workplace literacy movement; types of partnerships providing workplace literacy services; factors influencing program participation; planning, assessment, and evaluation; instructional services; and staffing. The final section of this chapter discusses program components that are likely to be present in successful workplace literacy projects.

The Workplace Literacy Movement

In recent years, American businesses and educational institutions have joined forces to provide workers with educational services that are directly related to improving on-the-job skills. This type of training has come to be known as workplace literacy. Workplace literacy is generally distinguished from basic skills instruction by its focus on improving job performance and productivity rather than a focus on improving basic skills of individuals for general use (i.e., reading, writing, calculating, problem-solving, and communication).

Beginnings of the Workplace Literacy Movement

The workplace literacy movement evolved directly from Thomas Sticht's analysis of literacy demands in the military which found that using job-specific materials improved job performance more than using general academic materials (Sticht, 1975). Subsequent studies of literacy demands in civilian jobs found that a significant amount of work time involves reading; that reading tasks are often repetitive; and that literacy demands of school are different from those in the workplace and often do not prepare workers for employment (Mikulecky, 1982; Mikulecky et al., 1987; Mikulecky & Diehl, 1980).

Lack of Consensus on a Definition for Workplace Literacy

Despite the wide use of the term workplace literacy, there is a lack of consensus as to how it is precisely defined. The literature suggests that there is a difference between textbook definitions of workplace literacy and its actual application in industry programs.

The terms "workplace literacy" and "basic skills" are often used interchangeably. Workplace literacy has been defined as knowledge of "the written and spoken language, math, and thinking skills that workers and trainees use to perform specific job tasks or training" (Askov et al., 1989, pp. 1-2). A simpler definition that has been suggested is "job-specific reading, writing and computation tasks" (Philippi, 1988). Basic skills have been defined as "fundamental skills for

communication which include reading, writing, mathematics, speaking, listening, and communication" (Askov et al., 1989). Workplace literacy and basic skills are very similar in definition, except that workplace literacy ties basic skills to performance of specific job tasks. Yet the distinction between workplace literacy and basic skills is important, particularly in their application in business and industry programs.

Descriptions of individual programs suggest that not all workplace programs teach job-specific skills. In fact, many workplace literacy programs frequently offer general basic skills classes at work sites, including ABE or GED classes (National Alliance of Business, 1990; U.S. Department of Labor, 1988a; Fields et al., 1987; Mark, 1987). The lack of a consensus in defining workplace literacy has made it difficult to compare studies of individual programs and to generalize across programs.

Partners in Workplace Literacy Projects

Partners in workplace literacy projects often include businesses, educational organizations, labor unions, private industry councils, state education agencies, community-based organizations, for-profit organizations and consultants, and libraries (Mendel, 1988; U.S. Department of Labor, 1988a; "Bottom Line," 1988; Carnevale et al., 1990b). These partners typically provide classroom space, monitor program services, and help finance the program, including providing funds for purchasing books and materials, developing curriculum, and training staff (National Alliance of Business, 1990; U.S. Department of Labor, 1988a; Fields et al., 1987).

Workplace literacy services are typically offered at the worksite, with instruction provided by local educational institutions or community-based organizations. These educational organizations generally staff the program, develop the curriculum, and help in evaluation activities. Typical education providers include ABE programs, community colleges, school districts, local universities, non-profit literacy organizations, and technical schools.

Role of Unions

Unions are often active partners in workplace literacy projects and have responsibilities similar to those of business partners. Unions may provide financial backing (in large companies), help publicize education programs, recruit participants, assist in developing job-specific curricula, hold classes in union halls, provide peer tutors from union membership, provide support services for participants, and hire instructors (Sarmiento & Kay, 1990; BCEL, 1987). Involving unions also helps to ensure employee involvement.

Importance of Employee Involvement

Workplace literacy projects should involve employees who are potential participants in all aspects of workplace literacy projects ("Bottom Line," 1988; BCEL, 1987). For example, it has been suggested that "better results are usually achieved by a representative company-wide planning team" (BCEL, 1987, p. 9). Advisory panels, which are responsible for overseeing all aspects of a workplace literacy project, are one mechanism for involving employees in workplace literacy projects (Carnevale et al., 1990a and 1990b).

A worker-centered approach to workplace literacy in which employees are part of the decision-making process is another mechanism of employee involvement. Employees in worker-centered workplace literacy projects have an important role in all aspects of the project, including designing instructional services and assessment instruments. Businesses as well as workers should benefit when employees have input into the content of instructional services at workplace literacy projects.

Methods to Enhance Participation

Many participants in workplace literacy projects have failed previously in traditional educational settings and are likely to be skeptical about receiving additional instructional services. Participants may also be concerned that they could be passed by for a promotion, denied a salary increase, or lose their job if they admit to needing workplace literacy services. Recruitment activities should, therefore, be an important component of workplace literacy projects. Furthermore, a number of project components may influence continued participation.

Recruitment

Program participants are recruited through a variety of means:

- Supervisor referrals;
- Personal contacts by personnel offices;
- Union endorsements;
- Notices or flyers;
- Public meetings;
- Word of mouth;
- Mass mailings; and
- Notes or referrals based on low scores on standardized tests (National Alliance of Business, 1990; U.S. Department of Labor, 1988a; Fields et al., 1987).

The variety of techniques reflects differences of opinion about what methods are least threatening to employees and which employees employers wish to target -- i.e., new employees, employees with good attendance or performance records, employees with limited English proficiency, or employees who lack basic skills necessary for promotion (National Alliance of Business, 1990; Arlington Education and Employment Program, 1989).

Project Components Influencing Participation

Many factors influence an employee's decision to participate in workplace literacy projects. These include project name, schedule and location of instructional services, and availability of support services such as child care, transportation assistance, and counseling.

Project Name. Businesses indicate that employees are more willing to participate in a program if they are guaranteed that their test results and participation will be confidential (U.S. Department of Labor, 1988a). Some programs have found that embarrassing potential participants can be minimized through carefully naming the literacy program and by integrating workplace literacy training into the company's overall training efforts (National Alliance of Business, 1990; "Bottom Line," 1988). Examples of project names that camouflage a basic skills component include "Aim to Learn And Succeed" (ATLAS), a program with Bell Atlantic; "R.O.A.D. to Success," a program for Pennsylvania truck drivers; and Labor Education Achievement Program (LEAP), a Maryland program for union employees in Baltimore.

Scheduling Instructional Services. Most companies have developed instructional schedules that are convenient for the greatest number of workers possible. They may offer classes with or without pay outside of work hours, or split the time evenly between work and off hours. Off-hour training is usually scheduled around shift hours. Anecdotal evidence from small studies suggests that retention is higher in projects offering services entirely on company time (National Alliance of Business, 1990; "Bottom Line," 1988; U.S. Department of Labor, 1988a; Fields et al., 1987).

Location of Instructional Services. Workplace literacy classes tend to be taught on-site for employee convenience and access to job materials and machinery, and to avoid the negative connotations of a school setting. Some programs, however, do refer employees to classes at local community colleges or ABE centers (National Alliance of Business, 1990; "Bottom Line," 1988; Fields et al., 1987).

Support Services. The literature provides little information on the range or types of support services offered in workplace programs. Some large companies offer educational and career counseling, as well as personal counseling in areas such as drug and alcohol rehabilitation, parenting, divorce, and self-esteem (Carman-Ainsworth Community Schools, 1988; U.S. Department of Labor, 1988a). Unions can also play a significant part in providing support services such as educational and career counseling, as well as peer coaching (BCEL, 1987).

Program Planning, Assessment, and Evaluation

Information about employee literacy competencies is needed by companies to determine whether there is a need for a workplace literacy project, identify the specific literacy skills for which instruction is required, and evaluate the program. The decision to establish a workplace literacy program is usually influenced by the perceived extent of skill deficiencies in employees, as well as the availability of resources to support such services (Askov et al., 1989; Carnevale et al., 1990a and 1990b). After a business has agreed to participate in a workplace literacy project,

additional analyses should be conducted to determine the specific literacy skills required of different jobs in the organization. The term for this procedure is a literacy task analysis.

Needs Assessments

Before agreeing to participate in a workplace literacy project, companies must first understand and acknowledge that their employees have a literacy problem that adversely affects productivity ("Bottom Line," 1988; Carnevale et al., 1990a). The extent of the literacy problem may be determined through interviewing and surveying employees and/or supervisors, and observing employees on the job.

Needs assessments should identify several factors that could influence whether a business decides to participate in the project:

- Basic skills deficiencies that cost a company money or threaten health or safety;
- Number of reliable workers who do not have the skills to be promoted to higher-level jobs or have limited English proficiency;
- Technological changes that necessitate retraining of workers; and
- Frequency of mistakes caused by a lack of basic skills (Fields et al., 1987).

Assessing Participant Skill Levels

Assessing employee skill levels for workplace literacy projects is usually complicated by the lack of easily quantifiable measures directly related to job performance. Due to the absence of such measures, many companies use informal interviews with employees and reviews of job applications as assessment devices to determine the literacy competencies of potential participants.

Academic tests, such as those used in adult education projects, are also frequently used in assessing both the initial literacy skill level of employees and improvements in skill levels that could be attributed to program participation. For ESL participants, some researchers suggest that employers have found informal measures such as interviews to be most useful in determining English language proficiency (Center for Applied Linguistics, 1983).

Academic-Based Tests. Two types of academic tests -- norm-referenced and criterion-referenced tests -- are frequently used to determine placement level upon entry into a workplace program, to assess progress, and to measure skills gained upon completion of a program (Strumpf et al., 1989; Massachusetts State Executive Department, 1986).

Norm-referenced tests compare the performance of a student relative to an individual or group. Many workplace literacy programs rely on norm-referenced, academic-based skills tests such as the Tests of Adult Basic Education (TABE), Adult Basic Learning Examination (ABLE), and Wide Range Achievement Test (WRAT). Criterion-referenced tests measure specific objectives and mastery of tasks or skills. Research suggests that criterion-referenced tests, rather than norm-referenced tests, are more suitable instruments for measuring work-related skills (Strumpf et al., 1989). Criterion-referenced test scores are considered in relation to a standard

that measures whether one has learned a concept. Norm-referenced tests measure performance in relation to others who have taken the test and not whether or how well one has learned a concept.

While these tests were developed for adults, there is concern among researchers and practitioners about the appropriateness of using standardized tests to assess participant abilities for ABE as well as workplace literacy programs (Bean et al., 1989; Massachusetts State Executive Department, 1986). Specific concerns include the long length of the tests and whether they are intimidating for low-level readers who are unable to answer most of the questions (Clark, 1986; Cranney, 1983; Mezirow et al., 1975; Karlsen, 1970). Another problem associated with standardized testing occurs when the test is used "for both program accountability and instructional decision making" (Sticht, 1990, p. 28). Also, standardized assessment instruments may report inaccurate gains in skill levels that are due to improving test-taking skills and study habits, and not because a set of skills have been mastered (Sticht, 1990).

There are additional concerns about whether these tests are relevant in a job training context (BCEL, 1987; Massachusetts State Executive Department, 1986; Center for Applied Linguistics, 1983). Sticht and Mikulecky (1984) note: "It appears likely that, in relation to job performance, it is considerably more important to apply basic skills in specific job situations than it is to demonstrate such skills on standardized tests" (p. 8). This issue becomes even more important when programs are evaluated, since program success should be based on improved job performance and productivity, and not just in terms of grade-level achievement (Philippi, 1988).

Life Skills Tests. As a substitute for academic-based tests, workplace programs have begun to look to life skills-based assessment measures, which are designed to test basic skills in the context of everyday experiences. Life skills tests differ from academic tests in content, reading level, and format. Some life skills tests are distributed through adult education publishers and are based on the Adult Performance Level Project, which developed a model of adult functional competency in areas such as occupational knowledge, consumer economics, reading, writing, computation, and problem solving (Northcutt, 1975).

One example of a life skills test is the REAL, which uses examples from real-life materials such as newspaper articles, traffic signs, want ads, road maps, and forms. The REAL measures functional competencies -- how learners respond to working with these real-life materials and how they may be expected to function in a work or life setting. In contrast, academic tests measure prior knowledge and skills developed in school settings (Bean et al., 1989; Massachusetts State Executive Department, 1986). Whereas academic tests typically range from about a seventh to a 12th grade level, the REAL is written for those whose reading comprehension levels are between the third and eighth grade (Massachusetts State Executive Department, 1986).

Literacy Task Analysis

Literacy task analyses are intended to identify specific duties, skills, and materials necessary to perform the various jobs for which literacy training has been targeted. Employers may use in-house human resource staff or an outside agency or consultant to perform these analyses, which include breaking down the components of a specific job and determining the literacy skills that are needed to perform job tasks (Askov et al., 1989; "Bottom Line," 1988; Carnevale et al., 1990a; Philippi, 1988; Sticht & Mikulecky, 1984).

Components of a Literacy Task Analysis. A literacy task analysis follows several basic steps and may use questionnaires, interviews, personal observation, and document review. Conducting a literacy task analysis includes all or some of the following activities:

- Analyzing individual job tasks and the work environment through personal observation, noting those tasks that use basic skills such as reading, writing, and computation;
- Collecting and analyzing materials used on the job, determining how they are used to perform the job and what reading abilities are required;
- Interviewing employers and supervisors to determine the skills they perceive are necessary for each job;
- Determining whether employees have the basic skills needed to perform their jobs well, based on the earlier interviews and analysis; and
- Developing assessment instruments and measures that relate specifically to each job ("Bottom Line," 1988, pp. 14-15; Carnevale et al., 1990a and 1990b; Philippi, 1988).

Difficulties Associated with Literacy Task Analyses. Although researchers and practitioners are unanimous in recommending some form of job analysis for workplace literacy programs, it is unclear just how thorough and prevalent such analyses are. The literature identifies at least two concerns related to conducting a literacy task analysis. Some workers fear that literacy analyses, and literacy programs in general, may be used as a screen to remove workers for whom retraining would not be cost-effective (Sarmiento, 1989; "Bottom Line," 1988). Also, the cost of conducting these analyses may be prohibitive for small businesses. Small businesses are more likely to conduct an informal, less extensive analysis of job task skills (National Alliance of Business, 1990; "Bottom Line," 1988).

Evaluating Workplace Literacy Programs

To have some standard for evaluating program success at the end of a prescribed time, specific written performance objectives should be established at the program's outset. Also, the company's goals for participating in the program must be clearly stated (Askov et al., 1989; Philippi, 1988). For example, companies may seek to teach specific job skills because of changing technologies, to improve basic skills so that employees may obtain a GED for promotion, to improve productivity by boosting employee morale and personal satisfaction, or to teach English to limited English proficient workers.

The literature offers little formal evaluative data on successful workplace projects. However, it suggests that evaluations are typically conducted through informal indicators including:

- Participant attitude surveys;
- Self-evaluation forms;

- Performance reviews;
- Supervisor reports of improved work performance;
- Instructor progress reports; and
- Program attendance and completion records (Arlington Education and Employment Program, 1989; BCEL, 1987; Fields et al., 1987).

Participant evaluations and anecdotes point to changes in employee morale, pride, and self-worth; enhanced job performance; and retention in the program and in the job (U.S. Department of Labor, 1988a; BCEL, 1987; Fields et al., 1987). More concrete results typically include increased promotions, pre- and post-test data from academic-based ABE tests, and obtainment of a GED or high school diploma (U.S. Department of Labor, 1988a; Fields et al., 1987).

Without detailed evaluations, employers point to increased productivity, increased sales, better service to customers, fewer customer complaints, and reduced costs due to less waste and fewer worker errors ("Bottom Line," 1988). Other reviews have noted that successful workplace literacy programs can improve the level of trust between union and management and diminish a paternal relationship between employer and employee (Fields et al., 1987).

Instructional Services

A distinguishing characteristic of workplace literacy is that instruction should be related to specific job tasks. Yet, it is unclear whether most workplace literacy projects offer job-specific instructional curricula. The research identifies, however, a number of specific generic skills that are desired by employers. Information is also available about instructional strategies that are appropriate for workplace literacy.

Importance of Linking Instruction with Job Tasks

Researchers and practitioners place heavy emphasis on linking workplace literacy instruction to job tasks, and point to a need for a "performance based/functional context curriculum" (Carnevale et al., 1990a; Askov et al., 1989; "Bottom Line," 1988; Sticht & Mikulecky, 1984; Sticht, 1975). In a functional context, according to Sticht and Mikulecky: "Skills and knowledge are best learned if they are presented in a context that is meaningful to the persons. Training should therefore use job reading and numeracy materials and tasks" (Sticht & Mikulecky, 1984). The American Society for Training and Development also indicates that job-based material "produces the quickest, most effective improvements in employee performance" (Carnevale et al., 1990a, p. 4) and allows the employee to build on what he or she knows, to retain new skills by using them in the context in which they were learned, and to improve thinking and problem-solving skills (Philippi, 1988; Askov et al., 1989; Sticht, 1975).

Businesses appear to be especially interested in linking instruction with job tasks because of the apparent mismatch between school-based learning and acquisition of job skills ("Bottom

Line," 1988). For example, the emphasis on expository writing in high school contrasts with employer needs for analysis and synthesis of information. Similarly, the sequential, fundamental approach to school math differs from the contextual math that relates to specific job tasks (Carnevale et al., 1990a; Philippi, 1988; Sticht & Mikulecky, 1984; Mikulecky, 1982).

Some instructors hired from adult education organizations find they must deviate from established adult basic education curricula and develop customized materials instead of relying on published materials. Functional context proponents maintain that instructional approaches and materials should be based on recognition of prior student knowledge and be tailored to meet specific job needs (Philippi, 1988; Mikulecky, 1982; Sticht, 1987). In a functional context-oriented program, instructional materials are drawn from actual work materials. In basic skills, ESL, or GED classes, however, curricula may resemble materials used in adult basic education programs. The objectives of the company and its employees may determine whether or not job context is incorporated into basic skills classes (National Alliance of Business, 1990; U.S. Department of Labor, 1988a; Fields et al., 1987).

Uncertainty about Prevalence of Job-Specific Instructional Curriculum. Despite the emphasis on "context" and job-specific curriculum, the literature does not provide a picture of how widely the approach is used in workplace literacy projects (U.S. Department of Labor, 1988a; Fields et al., 1987). Because a literacy analysis is needed prior to setting up a functional context curriculum, some smaller companies find the cost prohibitive (National Alliance of Business, 1990). Anecdotal evidence, a handful of brief descriptions of workplace programs, and a few surveys of large businesses suggest that general basic skills classes and preparatory classes for GED and high school diplomas are offered by a small number of businesses.

Generic Skills Desired by Employers

A workplace literacy curriculum should be guided by a core group of skills identified by the employer as necessary for functioning in most jobs. In addition to traditional basic skills such as reading, writing, and arithmetic, skill groups that employers seek in their employees have been identified through surveys of current literature and interviews with experts and practitioners. These skill groups combine the elements of both workplace literacy and basic skills (Carnevale et al., 1990b).

One desired skill, "learning to learn," refers to the ability of employees to acquire knowledge and skills across job situations. The term has emerged in response to the diversification of tasks demanded in jobs. More advanced technology means that workers must know how to operate more complicated machinery and computers, thus requiring basic reading skills and mathematical skills to read directions, enter data, and solve problems. Changes in technology also mean that skills must be more generalized so that the need for retraining can be minimized and workers can adapt more easily to such changes (Carnevale et al., 1990b; Askov et al., 1989).

Other generic skills employers seek are:

- Communication skills;
- Vocabulary usage;

- Creative thinking/problem-solving;
- Self-esteem, motivation, and career development;
- Recognizing cause and effect, predicting outcomes;
- Using charts, diagrams, and schematics;
- Teamwork and interpersonal skills; and
- Leadership and organizational skills (Carnevale et al., 1990b; "Bottom Line," 1988; Philippi, 1988; Henry & Raymond, 1983).

The subjects taught in workplace literacy programs vary from company to company, but reading, writing, and mathematics are the most common. Other subjects include computer operation and programming, communication skills, problem solving, electronics, physics, chemistry, interpersonal skills, study skills, algebra, and trigonometry.

There is a difference between the types of literacy training needed for technical jobs and lower-skilled service jobs (U.S. Department of Labor, 1988a). For example, jobs that require little if any reading, writing, or computation skills (e.g., janitorial service) might focus on improving generic skills, while more technical jobs would require more job-specific skills. Generally, companies participating in workplace literacy projects offer a combination of job-related instruction and general literacy instruction ("Bottom Line," 1988; U.S. Department of Labor, 1988a; Fields et al., 1987).

Instructional Strategies

Assessments of some workplace programs suggest that workers tend to perform better in a regularly scheduled class or small group setting than in a self-paced, self-structured format, in part because of the cooperative, teamwork approach that companies use on the job (Massachusetts State Executive Department, 1986; "Bottom Line," 1988). Programs nevertheless use a variety of methods, including individual tutoring, small groups, computer-assisted instruction, and traditional classroom instruction, often in combination (U.S. Department of Labor, 1988a; Fields et al., 1987).

For employers relying heavily on computer technology, computer-assisted instruction (CAI) is an important feature in workplace classes. Program reviews describe the use of computers, but there is no comprehensive national data to document the prevalence of CAI in workplace literacy programs (National Alliance of Business, 1990; BCEL, 1987; Fields et al., 1987).

Instructional Schedule

Frequency and duration of classes vary from program to program. Profiles of some individual programs suggest that fixed length classes are common, lasting a quarter or semester, with classes meeting once or twice a week for about two hours per class (National Alliance of Business, 1990; U.S. Department of Labor, 1988a; Fields et al., 1987). Open-entry, open-exit

classes are also common, and are encouraged for employees who want flexibility and self-paced learning (National Alliance of Business, 1990).

Staffing

Among the issues related to staffing that are of importance for workplace literacy programs are selecting and training instructors.

Selecting Instructors

In selecting the teaching staff for workplace programs -- often adult education teachers -- employers may look to any number of sources, including an educational organization or literacy provider, or a company employee with a background in training or education. Large companies are more likely to rely on in-house instructional staff (Carnevale et al., 1990a; Lee, 1989). To combine the knowledge of employment training staff and education providers, employers may use different types of training arrangements including:

- Basic skills providers assisting the employer's trainer;
- Basic skills providers and technical experts co-teaching;
- Technical experts assisting literacy providers; and
- Peer tutors consulting on technical issues (Askov et al., 1989).

Skills and experiences that workplace literacy instructors should possess are:

- Familiarity with adult learning theory;
- Providing training in an applied context;
- Expertise in the subject area;
- Ability to initiate and modify new subject curricula and instructional approaches that are not school based;
- Experience teaching basic workplace skills in a job-related context; and
- Ability to work with company personnel and adhere to company requirements (Carnevale et al., 1990b; Fields et al., 1987).

Training Instructors

The literature offers few details on the type of training provided to instructors in workplace programs. For those instructors from educational organizations, minimal requirements such as a bachelor's degree with certification in elementary or secondary education may be all that

is required, as is the case for many teachers in ABE programs. Some background in vocational training may also be required.

Summary

The research on workplace literacy programs is limited to primarily descriptive studies describing the organization and content of existing programs. Although empirical data are not available to document the characteristics of effective workplace literacy programs, the available research provides a number of suggestions about elements of workplace literacy programs that are likely to be associated with more successful programs. These include:

- A close and collaborative relationship between workplace literacy partners such as businesses, educational providers, and unions;
- Involving employees in all aspects of the project;
- Conducting a literacy task analysis that involves interviewing participants and their supervisors, observing employees on the job, and reviewing written materials with which participants must be familiar;
- Establishing clear and objective program goals that can be assessed by quantifiable measures that are not associated with standardized tests typically used in adult education programs;
- Linking workplace literacy instruction to job tasks and providing instructional services in a functional context;
- Providing instructional services in a regularly scheduled class or small group setting that is consistent with the cooperative, teamwork approach that companies use on the job; and
- Selecting instructors who have experience teaching adults.

CHAPTER 3

ELEMENTS ASSOCIATED WITH EFFECTIVE WORKPLACE LITERACY PROJECTS: FINDINGS FROM SIX WORKPLACE LITERACY PROJECTS

Site visits were conducted to six workplace literacy projects funded by ED's National Workplace Literacy Program (NWLP). Nine education providers and 13 businesses at the six sites (see Figure 3-1) were visited. Site selection was based on OVAE recommendations of effective projects and included projects representing the range of types of businesses and educational providers.[1]

The objectives of the site visits were to obtain information about the key elements of the projects as identified through the literature review; and provide information leading to recommendations for improving program effectiveness and for designing an impact evaluation of the NWLP.

Findings from the sites are organized around five topical areas:

- Role of Workplace Literacy Project Partners;
- Methods to Enhance Participation;
- Program Planning, Assessment, and Evaluation;
- Instructional Services; and
- Staffing.

Whenever possible, information from the site visits is compared with findings from the research literature. However, since research is limited, and generally only descriptive information is available, few comparisons between the research literature and site visit findings can be made.

Role of Workplace Literacy Project Partners

Workplace literacy projects are usually jointly operated by educational providers and businesses, labor organizations, private industry councils, and state education agencies. Services are typically offered at the worksite, with instruction provided by education organizations. Many opportunities exist for staff from both businesses and education providers to become involved in the operation and services of workplace literacy projects.

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[1] Due to the absence of quantitative data necessary to identify particularly effective projects (i.e., improved productivity, low participant attrition, or improved test scores), study sites were recommended by OVAE staff. These sites were reported by project directors to have a high retention rate.

FIGURE 3-1

EDUCATION PROVIDERS AND BUSINESSES VISITED AT STUDY SITES*

Workplace Literacy Project	Education Provider	Business
Grady Memorial Hospital Job Skills Enhancement Program (JSEP) -- Georgia	• Georgia State University	• Grady Memorial Hospital
Labor Education Achievement Program (LEAP) -- Maryland**	• Baltimore County Public Schools	• Maryland Specialty Wire
	• Community College of Baltimore	• Baltimore Tin Plate
Workplace Education Program (WEP) -- Massachusetts	• Mount Wachusett Community College	• Digital Equipment Corporation
	• Chinese American Civic Association	• South Cove Manor
	• Quinsigamond Community College	• Kennedy Die Castings
DIRECTIONS - Minnesota	• Normandale Community College	• Empak • United Mailing • Medallion Kitchen
Fayetteville Technical Community College -- North Carolina	• Fayetteville Technical Community College	• Black & Decker • Crowell Constructors
Arlington Education and Employment Program (REEP) -- Virginia	• Arlington Public Schools	• Days Inn • Hyatt Arlington

*At all study sites, except for the Grady Memorial Hospital Job Skills Enhancement Program, we visited a sample of the educational providers and businesses.

**The AFL-CIO and the Maryland State Department of Education are at L[illegible].

Education Institution Involvement in Workplace Literacy Projects

Education providers at all study sites are directly responsible for instruction-related activities as well as activities that ensure the continued operation of the workplace literacy projects. These activities include:

- Determining the literacy requirements of different jobs through interviews with supervisors and participants, and sometimes observing participants on the job;
- Assessing the literacy competencies of participants;
- Developing instructional materials that are related to the work environment;
- Hiring, managing, and training instructors;
- Designing and implementing a program evaluation component; and
- Managing paperwork and reporting requirements of the grant.

The specific role of education providers in each of these activities is described in subsequent sections of this chapter.

Business Involvement in Workplace Literacy Projects

Businesses at the study sites are generally supportive and actively involved with the workplace literacy projects. Their involvement includes participating in literacy task analyses, assisting in identifying and recruiting participants, providing room for instructional services, and offering monetary incentives to participants. These activities will be discussed in subsequent sections of the chapter.

Information from the site visits indicates that the business sites were generally not involved with initiating the respective projects. Only three of the 13 business sites -- Grady Memorial Hospital, South Cove Manor, and Digital -- were actively involved with the education providers in preparing the original ED grant application. The nature of involvement by the 13 businesses visited for this study generally consists of providing space for instructional services, publicizing the program, assisting in recruitment activities, participating in a literacy task analysis, providing business materials that may be incorporated into instructional materials, and attending advisory panel meetings.

Staff at all 13 business sites are supportive of the respective workplace literacy projects. However, few indicate a commitment to continue the project without either Federal or other outside funding. One exception is Digital, which, in the original funding proposal to ED, indicated that it would assume responsibility for operating the workplace literacy project. Digital is currently negotiating a contract with Mt. Wachusett Community College to continue the project.

Two business sites -- Grady Memorial Hospital and South Cove Manor -- were interested in continuing the project but could not because of budget constraints. Grady Memorial Hospital

is a public institution and staff have very limited control over budget expenditures. South Cove Manor is a nursing home whose patients are predominantly on Medicaid.

The Role of Upper Management. The role of upper management at each of the businesses visited for the study generally involves supporting and promoting the program and maintaining communication with the education partner.

At most sites, upper management staff were responsible for originally overseeing the involvement of the business in the workplace literacy project. At Grady Memorial Hospital, for example, the personnel director initiated meetings with the associate director and department managers to promote the program and solicit their cooperation.

At two sites in Massachusetts -- Digital and South Cove Manor -- upper management staff were responsible for initiating the project. The Business Development Manager at Digital recognized the need for a workplace literacy project and initiated discussions with Mt. Wachusett Community College to develop such a program. Similarly, South Cove Manor contacted the Chinese American Civic Association with the request to collaborate on the development of a workplace education program that would meet the facility's specific needs and to work together in preparing a proposal for external funding.

Upper management staff are also involved with some projects on an ongoing basis. For example, the South Cove Manor Staff Development Coordinator and the Director of Nursing have been involved with deciding curriculum content. At Kennedy Die Castings, the Vice President and Plant Manager are involved with providing feedback on curriculum, identifying employees for upcoming classes, and serving as guest speakers for classes.

The Role of Supervisors. Supervisors have more than a supportive role in six of the business sites -- Digital, Empak, United Mailing, Medallion Kitchen, Days Inn, and Hyatt. At Digital, supervisors spend between one and two hours per week on matters relating to the workplace literacy project. They assist teachers in evaluating participants, provide both verbal and written feedback about participant performance to instructors, keep instructors informed about changes in job requirements, and provide instructors with work-related materials that can be used in providing instructional services.

At some projects where instructional services are offered during working hours, supervisors were at first skeptical about the project. Supervisors at five business sites -- Grady Memorial Hospital, Kennedy Die Castings, Empak, United Mailing, and Medallion Kitchen -- were initially reluctant to allow employees to attend instructional services on company time. Managers at Grady Memorial Hospital initially viewed the classes as a way of "employees getting out of their work for three hours a week." Supervisors at Empak, United Mailing, and Medallion Kitchen also initially had a difficult time understanding how employee participation would improve productivity. Over time, however, supervisors at each of these projects began to have a sense that the productivity of employees participating in the program would actually improve.[2]

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[2] Quantitative data to support this perception, however, are not available from the projects.

The Role of Employees. Employees have been involved with workplace literacy projects at five study sites.[3] The level of worker participation at the sites ranges from formal participation through membership on advisory panels to more informal participation with different aspects of the workplace literacy project.

Workers at six businesses -- South Cove Manor, Digital, Maryland Specialty Wire, Baltimore Tin Plate, Days Inn, and Hyatt -- are represented on workplace literacy project advisory panels. Worker representatives on the South Cove Manor advisory panel have been actively involved in planning the project, including reviewing instructional materials. Union workers from Maryland Specialty Wire and Baltimore Tin Plate, as well as the other business sites participating in LEAP, account for almost 75 percent of that project's advisory panel membership.

At all study sites, there are numerous examples of less formal employee involvement in all aspects of the workplace literacy project, including job task analyses, designing instructional materials, recruiting participants, and evaluating projects. At LEAP, the frequency of student testing was reduced as a result of employee recommendations.

Advisory Panels

Advisory panels or committees are frequently used by the study sites and, as discussed in the previous section, are a mechanism for involving employees in all aspects of workplace literacy projects. All study sites, with the exception of Georgia State University's project at Grady Memorial Hospital, have instituted advisory panels. The Grady project director does not believe it is necessary to establish a formal advisory board and maintains that ad hoc meetings between hospital and university staff have been sufficient to implement and operate the project.

At two sites -- Fayetteville Technical Community College and Digital -- the advisory boards are less actively involved in project activities. Fayetteville Technical Community College's advisory panel is actually a community task force of about 50 people that addresses the college's overall adult education program. At Digital, the panel meets periodically to make suggestions for program involvement and to formulate strategies to increase student enrollment.

Panel Membership. Advisory panel members generally include persons from the education institutions and the businesses, as well as representatives from other organizations involved in the project, such as unions (at LEAP) and private industry councils (at DIRECTIONS, Kennedy Die Castings, and Digital). As discussed in a previous section, workers from six businesses -- South Cove Manor, Digital, Maryland Specialty Wire, Baltimore Tin Plate, Days Inn, and Hyatt -- are members of project advisory panels. At two projects -- LEAP and DIRECTIONS -- businesses are not represented on the advisory panel. At LEAP, businesses are not partners in the project.

Panel Activities. Responsibilities of advisory panels generally center on issues of planning, staffing, managing, evaluating, and publicizing the project. For example, at the two REEP business sites -- Days Inn and Hyatt -- the advisory panels are policymaking bodies that make

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[3] Information on employee involvement was not obtained from one of the six study sites -- DIRECTIONS, which is a consortium of small businesses in Minnesota.

decisions on such issues as providing incentives for participants and determining specific course offerings. In addition, these panels have been instrumental in developing a training video for workplace literacy projects and in drawing media attention to the project. The LEAP advisory board (including Maryland Specialty Wire and Baltimore Tin Plate) has been successful in generating publicity for the project. Even during the project's planning stages, LEAP received newspaper publicity at the initiation of advisory panel members.

Methods to Enhance Participation

None of the study sites report long-term difficulty attracting or retaining participants. One reason that attracting and retaining is not a problem at most workplace literacy projects may be that project names generally do not convey that participants are lacking basic skills. Research indicates that carefully naming workplace literacy projects is one way to minimize embarrassment to participating employees and is therefore a factor that influences participation (National Alliance of Business, 1990; "Bottom Line," 1988). Four of the six site visit projects have names that enhance their basic skills components: Grady Memorial Hospital's Job Skills Enhancement Program (JSEP), the Labor Education Achievement Program (LEAP), DIRECTIONS, and Arlington Education Employment Program (REEP).

Other explanations for the lack of difficulty that study sites have in obtaining and maintaining participation may be related to the recruitment and retention methods that are used.

Recruitment Methods

A variety of recruitment activities to attract potential participants are used by the study sites. These include conducting meetings of potential participants and supervisors, distributing brochures and pamphlets, placing articles in company newsletters, using word-of-mouth publicity, and including notices in pay envelopes. These recruitment methods are consistent with the methods identified in the literature (National Alliance of Business, 1990; U.S. Department of Labor, 1988a; Fields et al., 1987).

Three businesses --- Digital, South Cove Manor, and Days Inn -- report that word-of-mouth or peer recruiting is their most effective method of recruitment. At Grady Memorial Hospital, presentations to potential participants by the teacher are also an effective method in recruiting students.

Fayetteville Technical Community College plays the major role in recruiting participants from Black & Decker and Crowell Constructors. Businesses play a major role in recruitment at many other study sites. At five of the 13 business sites -- Grady Memorial Hospital, Kennedy Die Castings, Empak, United Mailing, and Medallion Kitchen -- supervisors identify potential participants. Staff at two business sites -- South Cove Manor and United Mailing -- report that potential participants are identified when new staff are hired. During the intake interview at South Cove Manor, the workplace literacy project liaison encourages job applicants to participate in the program. At United Mailing, limited English proficient speakers are identified and channeled into ESL classes when hired. Crowell Constructors characterizes the workplace literacy

services as part of the company's "fringe benefits package" during interviews with potential employees.

Recruitment at the business sites participating through LEAP is largely the responsibility of the union. Union staff make presentations at union meetings and prepare articles for union newsletters. In addition, the project's peer counselor, who is also a local union president, recently obtained an external high school diploma and serves as a role model.

Program Retention Methods

Staff at the study sites indicate that retention is not a major concern and that activities designed to promote retention are generally not in place. The primary retention tool used by educational providers is informal telephone calls to participants who have been absent from class. Four educational providers -- the Chinese American Civic Association, Georgia State University, Arlington Public Schools, and Fayetteville Technical Community College -- also use telephone calls when participants miss a class. Only one educational provider -- Quinsigamond Community College -- provides participants with counseling services and tutoring, although supervisors at other sites sometimes counsel participants who have missed class.

At Kennedy Die Castings, if an employee misses a class, the instructor or company liaison speaks to the worker on the floor indicating that he/she was missed in class. At one business site -- Grady Memorial Hospital -- co-workers keep tabs on one another and if one misses class, a co-worker will call to find out why that person was absent.

Project Components that Promote Retention. Although most study sites do not undertake specific retention activities, at least four project components could contribute to the high rates of retention. One component is **location of instructional services**. All study sites provide educational services at the work site, although some projects also offer services at other locations. Staff at two business sites -- Kennedy Die Castings and South Cove Manor -- and one educational provider -- Baltimore County Public Schools -- report that on-site services are an important factor contributing to high retention rates.[4]

A second project component is providing **monetary and other incentives for participants**. Seven of the 13 businesses provide participants with some type of incentive. Four businesses -- Grady Memorial Hospital, Days Inn, Kennedy Die Castings, and Black & Decker -- provide paid

[4] Although only on-site services are provided at the two business sites visited for the project operated by Fayetteville Technical and Community College, a small percentage of instructional services provided to other business sites are located at the College instead of on-site. The workplace literacy project operated by the Community College of Baltimore in Maryland provides off-site instruction at all business sites except for Baltimore Tin Plate, the business visited for this study.

release time to participants.[5] Another site -- Hyatt -- pays a $250 bonus to participants completing the course.

Two business sites -- United Mailing and Crowell Constructors -- provide partial paid release time by reimbursing employees for half of the time spent in class. Another business site -- Medallion Kitchen -- excuses employees from work to attend instructional services, but does not provide any monetary incentives to participants. In addition, five business sites -- Kennedy Die Castings, Days Inn, Hyatt, Crowell Constructors, and Black & Decker -- sponsor award ceremonies for participants completing the project.

A third component cited by a number of sites as promoting participant retention is a **supportive learning environment**. Staff at three business sites -- Grady Memorial Hospital, Maryland Specialty Wire, and Digital -- indicate that supportive teachers who relate well to project participants are a key element in retaining workers in the program.

Another project component that could affect retention is **support services**. Support services such as child care assistance, education counseling, and transportation reimbursement are available to participants at six business sites -- LEAP's Baltimore Tin Plate and Maryland Specialty Wire, Fayetteville Technical Community College's Black & Decker and Crowell Constructors, the Chinese American Civic Association's South Cove Manor, and DIRECTION's United Mailing. Some of these services, however, are not necessarily designed specifically for participants in the respective workplace literacy projects.

In LEAP, the union partner is responsible for providing a wide range of support services including child care, transportation reimbursement, and education counseling. When LEAP instructional services are not provided on paid release time, participants requiring child care may receive a stipend of $7.00 for each two-hour class. LEAP participants also receive bus tokens after instructors verify that they attended classes. The project also offers counseling through the union partner and educational providers.

Child care assistance is also available at Fayetteville Technical Community College. However, it is rarely used because it only covers actual class time and must be in a licensed child care center. United Mailing offers child care to all employees at a company operated day care facility. South Cove Manor conducts three career counseling workshops each cycle. Participants at South Cove Manor also have access to services provided by the Chinese American Civic Association Multi-Service Center located near the nursing home. The Center offers a child care search, as well as education counseling. Project participants are also eligible for the Center's housing and fuel assistance, and immigration and employment counseling funded by other sources.

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[5] Even though participants at Crowell Constructors, and at certain Black & Decker classes, are paid for participating in the workplace literacy project, paid release time is the exception rather than the rule at business sites participating in the workplace literacy project operated by Fayetteville Technical Community College.

Program Planning, Assessment, and Evaluation

Workplace literacy projects have a three-month start-up period during which time they are to plan for the project, hire staff, and initiate literacy task analyses.

Needs Assessments

In general, informal needs assessments were conducted at a number of sites either prior to, or as part of, the grant application process. Digital training managers, for example, informally surveyed workers, reviewed samples of written work, and interviewed supervisors, workers and department heads prior to their involvement with Mt. Wachusett Community College. Similarly, two years prior to the Federal grant, the Baltimore Council of the AFL-CIO Union collaborated with local labor union leaders and management to conduct a preliminary assessment of the need for workplace literacy. In contrast, staff at Fayetteville Technical Community College conducted informal surveys when they approached potential businesses. These surveys asked about the number of employees in need of a GED and the specific skills the employer thought were lacking to maintain their current jobs.

Quinsigamond Community College and Normandale Community College decided that needs assessments were not necessary. Employers at the businesses served by these colleges -- Kennedy Die Castings, Empak, Medallion Kitchen, and United Mailing -- believed they already had an accurate perception of where the major problems lay.

Assessing Participants' Skill Levels

Due to the lack of work-related measures of basic skills competencies, most study sites use academic-based standardized tests to assess the skill levels of participants. (See Figure 3-2). However, staff at many study sites are concerned about the appropriateness of using standardized tests for evaluating projects. As one project director indicates: "Measurement of participant progress is one of the toughest things we have grappled with."

Standardized tests are used to measure participant progress at eight business sites -- Digital, Black & Decker, Crowell Constructors, South Cove Manor, Days Inn, Hyatt, Baltimore Tin Plate, and Maryland Specialty Wire. The TABE is administered at three business sites -- Digital, Black & Decker, and Crowell Constructors. ESL participants at Digital are administered the assessment instruments from the ESL text, Side by Side.

Participants at Black & Decker and Crowell Constructors are also tested with the Wide Range Achievement Test (WRAT), the Poprik-Kornegy Informal Reading Inventory, and for workers with lower level skills, the Laubach placement tests. Three business sites -- South Cove Manor, Days Inn, and Hyatt -- administer the Basic English Skills Test (BEST). South Cove Manor is not satisfied with the BEST, and sees the content as being unrelated to the course curriculum. Project staff are searching for an alternative assessment instrument.

LEAP initially used the Maryland Adult Performance Program (MAPP), which is the state's adaptation of the Comprehensive Adult Student Assessment System (CASAS), to assess participants. Project staff believe that the test is not relevant for workers and have developed a

FIGURE 3-2

ASSESSMENT INSTRUMENTS USED AT STUDY SITES

Workplace Literacy Project	Educational Provider/ Business Sites	Assessment Instruments
Grady Memorial Hospital Job Skills Enhancement Program (JSEP)	Georgia State University/ Grady Memorial Hospital	• Cloze test • Writing sample • Role playing • "Check-up" tests
Labor Education Achievement Program (LEAP)	Baltimore County Public Schools/ Maryland Specialty Wire	• MAPP • Writing sample • Math inventory • Modified CASAS
	Community College of Baltimore/Baltimore Tin Plate	• CASAS • TABE
Workplace Education Program (WEP)	Mt. Wachusett/Digital	• TABE • ESL text Side by Side • Math assessment developed by Mt. Wachusett and Digital • Surveys of supervisors and teachers
	Chinese American Civic Association/South Cove Manor	• Surveys of supervisors and students • Teacher-made tests • BEST
	Quinsigamond Community College/ Kennedy Die Castings	• Teacher-made tests • Anecdotal information

FIGURE 3-2

ASSESSMENT INSTRUMENTS USED AT STUDY SITES (Continued)

Workplace Literacy Project	Educational Provider/ Business Sites	Assessment Instruments
DIRECTIONS	Normandale Community College/ Empak, United Mailing, Medallion Kitchen	• Informal observations of participants
Fayetteville Technical Community College	Fayetteville Technical and Community College/ Black & Decker, Crowell Constructors	• TABE • WRAT • Poprik-Kornegy • Informal Reading - Inventory • Laubach • Surveys of supervisors
Arlington Education and Employment Program (REEP)	Arlington Public Schools/ Days Inn, Hyatt	• BEST • Teacher observation • Self-evaluation

new test using work-related items from CASAS to assess employees' reading skills. This test is being used by Baltimore Public Schools and most other educational providers in the project. However, the Community College of Baltimore is not satisfied with these tests and uses the original version of the CASAS and the TABE.

In addition to the standardized tests, participants at four business sites are tested with non-standardized assessment instruments, which in some cases supplement standardized tests, and in other instances are the only tests given. At Kennedy Die Castings only teacher-designed tests are administered. At South Cove Manor, teacher-designed tests were initially used, but proved unsatisfactory and were replaced with a standardized test. Georgia State University uses three types of pre- and post-tests to assess reading, writing, and oral communication: the Cloze test (a fill-in-the-blanks exercise), a writing sample, and role playing. They also use informal assessments and "check-up" tests. Digital and Mt. Wachusett Community College have developed their own math assessment instrument and are no longer using the TABE because they believe it is not work related and does not reflect student gains.

Literacy Task Analyses

The research cites the importance of conducting a literacy task analysis of specific job duties, skills, and materials when developing a workplace literacy project (Askov et al., 1989; Carnevale et al., 1990a; Sticht & Mikulecky, 1984). Some type of literacy task analysis was conducted at eight of the 13 business sites. A formal literacy task analysis was conducted at only one site -- Grady Memorial Hospital. At this business site, Georgia State University hired an independent consultant to conduct the job task analyses. As part of the literacy task analysis, workers were observed while working, and interviewed about the literacy demands of their jobs. Supervisors were also interviewed and all literacy materials relating to the jobs were collected. Through this process, specific literacy instructional objectives were developed.

More informal analyses of literacy needs were the rule rather than the exception. At seven of the business sites -- South Cove Manor, Days Inn, Hyatt, Black & Decker, Crowell Constructors, Maryland Specialty Wire, and Baltimore Tin Plate -- less formal analyses of literacy job skills were conducted.

The on-site coordinator at South Cove Manor spent approximately 90 hours observing workers on the job; meeting with workers to discuss their specific responsibilities, who they communicate with, and problems workers face on the job; meeting with administrators and supervisors; and collecting procedure manuals and other documents that staff are required to read. At Days Inn and the Hyatt, employees and supervisors were observed on the job and a new employee orientation session was observed by the project coordinator from Arlington County Public Schools. Questionnaires about workplace literacy requirements were completed by first-line supervisors at Days Inn and Hyatt.

Staff associated with Fayetteville Technical Community College relied on a number of question-and-answer sessions about workplace literacy needs with staff from Black & Decker and Crowell Constructors. A modified literacy task analysis, drawing on work by Larry Mikulecky and a CASAS skills inventory for employment, was used by Baltimore Public Schools at Maryland Specialty Wire and by the Community College of Baltimore at Baltimore Tin Plate. The

Community College of Baltimore did not conduct a formal literacy task analysis because all classes, except for Baltimore Tin Plate, are not held at the work site. Consequently, educational staff neither interact directly with business managers and supervisors, nor observe workers on the job.

Literacy task analyses were not conducted at five business sites. Three sites -- Empak, United Mailing, and Medallion Kitchen -- are small businesses and the expense of conducting a formal analysis was prohibitive. Digital did not conduct a literacy analysis because security restrictions prevented the observation of workers on the job. It was also felt that, since the company emphasized cross-training with each employee responsible for different kinds of job tasks at different times, conducting a literacy task analysis would not be useful. Kennedy Die Castings staff were aware of the limited English speaking abilities of their employees, and Quinsigamond Community College staff did not believe a literacy task analysis was necessary.

Project Evaluation

Evaluation appears to be a major concern at the study sites. However, formal evaluation activities typically are not conducted. Although most study sites measure the progress of individual participants using standardized assessment instruments, these data are not aggregated so that a project can determine the average increase for all participants. This finding is consistent with the research indicating that projects rely on informal indicators for evaluation (Arlington Education and Employment Program, 1989; BCEL, 1987; Fields et al., 1987).

Evaluations of workplace literacy projects rely mostly on anecdotal evidence, including the perceptions of instructors and business supervisors and higher level staff. Supervisors and managers at the study sites indicate that they have noticed improved confidence, self-esteem, motivation, and communication skills in project participants.

Evaluation activities at Empak, United Mailing, and Medallion Kitchen are basically informal and limited to asking participants if they enjoyed the instructional services, and asking supervisors if they have noticed positive changes such as improved work attitudes in participants. The REEP business sites -- Days Inn and Hyatt -- use teacher observations and self-evaluations. Mt. Wachusett Community College surveys supervisors and teachers at Digital, and Fayetteville Technical Community College surveys supervisors at Black & Decker and Crowell Constructors to assess job performance.

Instructional Services

A distinguishing characteristic of workplace literacy is the connection between instruction and the workplace. Workplace literacy instruction is often provided at the work site, rather than at an educational institution. Also, services are usually scheduled with consideration of participating businesses' production and work schedules.

Location of Services

All study sites provide educational services at the work site, although some projects offer services at other locations. Businesses usually provide space designated as classrooms as well as tables, chairs, and chalkboards.

Classrooms are generally provided wherever there is available space. The one exception is Digital, where classes are integrated into the corporation's total training program. Classrooms especially designated for the workplace literacy project are located in a separate corridor reserved for all workplace training.

Instruction at Grady Memorial Hospital takes place at hospital personnel quarters, which are one block from the hospital. South Cove Manor uses an orthopedic therapy room on the third floor of the facility. Black & Decker uses well-lit and ventilated trailers. An empty conference room is used for instruction at Crowell Constructors. The Hyatt's catering department is responsible for locating classroom space before each session and generally does not have a problem, although instruction is frequently provided in the hotel bar. Classes at Maryland Specialty Wire were initially held in the back of the cafeteria, but this was not conducive to learning, and classes have been moved to a small conference room at the entrance of the plant.

Locating suitable space for instructional services was initially a major problem at two of the business sites -- Grady Memorial Hospital and South Cove Manor. Also, classrooms at these sites must at times be relocated. When the orthopedic room at South Cove Manor is not available, classes are conducted in a conference room. Occasionally, the space at Grady Memorial Hospital is unavailable and an alternative location must be found.

Instruction at the Days Inn is not provided at a permanent location. Although the hotel has no difficulty finding room for instruction, participants sometimes have a problem locating the class. Off-site instructional services offered through Maryland's LEAP project are typically held in union halls, American Legion Halls, and schools.

Scheduling

There is substantial variation from site to site regarding the scheduling of instructional services, including the length of instructional cycles, the number of instructional hours per week, and the total number of instructional hours provided. (See Figure 3-3.)

Length of Instructional Cycles. Instructional cycles at the study sites range in length from six weeks at Grady Memorial Hospital to 20 weeks at Kennedy Die Castings. There are eight- to 10-week cycles at the small businesses participating in the DIRECTIONS project; 10-week cycles at Digital, 11- to 12-week cycles at South Cove Manor, Maryland Specialty Wire, Baltimore Tin Plate, Black & Decker, and Crowell Constructors; and 15-week cycles at Days Inn and Hyatt.

Frequency of Instructional Services per Week. At seven of the 13 business sites -- Grady Memorial Hospital, Crowell Constructors, Black & Decker, Digital, Days Inn, Hyatt, and Baltimore Tin Plate -- instructional services are provided twice a week. The three small businesses with DIRECTIONS -- Empak, United Mailing, and Medallion Kitchen -- receive

FIGURE 3-3

SCHEDULING OF INSTRUCTIONAL SERVICES*

Project	Business Sites	Schedule
Grady Memorial Hospital Job Skills Enhancement Program (JSEP) -- Georgia	• Grady Memorial Hospital	6-week cycles 3 hours per week 18 hours per cycle
Labor Education Achievement Program (LEAP) -- Maryland	• Maryland Specialty Wire • Baltimore Tin Plate	12-week cycle 8 hours per week 96 hours per cycle
Workplace Education Program (WEP) -- Massachusetts	• Digital Equipment Corporation	10-week cycles 1-4 hours per week 20-40 hours per cycle
	• South Cove Manor	11-12-week cycles 4 hours per week 44-48 hours per cycle
	• Kennedy Die Castings	20-week cycles 4 hours per week 80 hours per cycle
DIRECTIONS -- Minnesota	• Empak • United Mailing • Medallion Kitchen	8-10-week cycles 1 hour per week 8-10 hours per cycle
Fayetteville Technical Community College -- North Carolina	• Black & Decker • Crowell Constructors	6-11-week cycles 4 hours per week 44 hours per cycle
Arlington Education and Employment Program (REEP) -- Virginia	• Days Inn • Hyatt	15-week cycles 4 hours per week 60 hours per cycle

*At all of the study sites, except for JSEP in Georgia, the business sites represent a sample of the businesses participating in the project.

instruction only once per week, while services are offered four days per week at Kennedy Die Castings and three days per week at South Cove Manor.

Number of Instructional Hours per Week. Hours of instruction per week at the study sites range from one hour at the small businesses participating in the DIRECTIONS project to eight hours at Maryland Specialty Wire and Baltimore Tin Plate. Four hours of instructional services per week are provided at seven business sites -- Digital, Kennedy Die Castings, Crowell Constructors, Black & Decker, Days Inn, Hyatt, and South Cove Manor. At the remaining site -- Grady Memorial Hospital -- three hours of instructional services are provided each week.

Number of Instructional Hours per Cycle. There is substantial variation from site to site in the total number of instructional hours that are available per cycle. Instructional hours per cycle at the business sites range from only eight hours at small businesses participating in the DIRECTIONS project to 96 hours at LEAP.

Instructional Approaches

Education providers at all study sites provide instructional services through both small-group and individualized instructional formats. The types of instructional approaches used by the study sites are consistent with the variety of methods that research indicates are used by workplace literacy projects (U.S. Department of Labor, 1988a; Fields et al., 1987).

Various instructional techniques are used by each educational provider. Role playing or simulation is a technique used by four of the nine education providers -- Arlington County Public Schools, the Chinese American Civic Association, Normandale Community College, and Georgia State University. Staff at Arlington County Public Schools indicate that role playing is an especially effective instructional technique. Another frequently mentioned instructional technique is peer tutoring, which is used by three education providers -- Arlington County Public Schools, Mt. Wachusett Community College, and Normandale Community College.

Curriculum

Workplace literacy has been defined as the basic skills needed by workers to perform their jobs. These basic skills may be either specifically related to individual jobs, or skills that are required to successfully perform almost any job. At all study sites, at least some of the instructional materials are related to the literacy requirements of the workplace. This is true even at sites that have not conducted a literacy task analysis at the onset of the project. In addition, most study sites also use instructional materials that are not directly focused on the workplace and that are designed to include survival skills and citizenship.

Education partners at all study sites use instructional materials that include corporate manuals and procedures. Instructional materials being used by Fayetteville Technical Community College at Black & Decker and Crowell Constructors and by Normandale Community College at Empak, United Mailing, and Medallion Kitchen include company manuals and documents that are incorporated into instructional materials. Fayetteville Technical Community College also uses workbooks designed for teaching basic skills in a manufacturing context and in an office environment, as well as materials that are typically used in adult education programs. Mt.

Wachusett Community College uses corporate charts, graphs, and memos, as well as some adult education textbooks.

The curriculum used by Georgia State University is customized for jobs in three hospital departments and for the generic information that employees must process. LEAP has tailored the MAPP for general job categories at the work sites; specific instructional packets have been developed for eight job categories.

Staffing

Study sites have a small number of instructional staff, generally one or two per business site. Instructors are typically part-time employees of the workplace literacy project and are paid on an hourly basis.

Background of Instructors

Instructors at study sites generally have prior experience teaching ABE. Eight of the nine educational providers -- Georgia State University, Mt. Wachusett Community College, Chinese American Civic Association, Quinsigamond Community College, Baltimore Public Schools, the Community College of Baltimore, Fayetteville Technical Community College, and Arlington Public Schools -- hired teachers with experience in adult education programs. Instructors hired by Arlington County Public Schools are also employed as adult education teachers by the school system. Georgia State University was very concerned that its instructor relates effectively to low-income and predominantly black women who constitute the majority of participants.

Only one educational provider -- Normandale Community College -- did not hire teachers with adult education teaching experience. Instead, the project recruited teachers with experience in vocational education and teaching in proprietary schools. ESL teachers hired for the workplace literacy project, however, are required to possess ESL certification.

Three of the remaining educational organizations providing ESL instruction -- Arlington County Public Schools, the Chinese American Civic Association, and Quinsigamond Community College -- hired instructors with ESL experience.

Recruiting Instructors

Recruiting instructors is not a difficult task at the study sites. Only one of the educational providers -- REEP -- reports any difficulty in finding applicants for the teaching positions. For example, Georgia State University received 25 applications for the one full-time instructor position, and the Chinese American Civic Association received more than 10 applications for its one full-time position. The Community College of Baltimore, however, indicated some difficulty finding outstanding teachers who could relate well to the participants.

Most sites rely on one or two recruitment methods. Instructors at most study sites have been recruited through newspaper advertisements and job postings at the educational

organizations. Instructors employed by DIRECTIONS are recruited from workshops for ABE teachers that project staff conduct on workplace literacy-related topics.

Volunteers

Most study sites do not use volunteers to assist instructors. Volunteers are used by four of the educational providers at the study sites as instructional aides or tutors. Arlington County Public Schools has one volunteer teacher aide at the Days Inn. Georgia State University uses three full-time volunteers and three additional volunteers who are available on a more irregular basis. The number of volunteers used by the Maryland State Department of Education for LEAP has dropped from four -- when the project began -- to one. Mt. Wachusett Community College uses three Digital employees as volunteer peer tutors for basic ESL classes.

Staff at two educational providers -- the Chinese American Civic Association and Quinsigamond Community College -- have found it difficult to recruit reliable and dependable volunteers.

Staff Training Activities

Pre-service training is generally not available for prospective instructors at the study sites. Only two of the nine educational providers -- Georgia State University and Fayetteville Technical Community College -- offer training before instructional services begin. The full-time instructor at Georgia State University received three months of training from the assistant project director on using the whole-language approach to reading prior to the instructional phase of the project.

In-service training to instructors and volunteers is provided by five of the study sites. The Maryland State Department of Education provides semi-annual in-service training for all LEAP instructors. Fayetteville Technical Community College offers quarterly in-service training workshops to satisfy North Carolina requirements that adult education teachers receive 12 hours of in-service training annually. In-service training opportunities available for instructors employed by the Chinese American Civic Association include monthly staff development activities at the Adult Literacy Resource Institute in Boston and a semi-monthly instructors meeting led by the Association's deputy director. At Arlington County Public Schools, in-service training occurs at monthly team meetings. A two-hour in-service training session is provided to Georgia State University volunteers. This short session is designed to review project objectives and the instructional materials used by the project.

Staff at two educational providers -- Quinsigamond Community College and Mt. Wachusett Community College -- indicate that training is available, although instructors are not necessarily required to attend the sessions. Quinsigamond Community College reimburses instructors for conference registration and up to two hours of salary per month for attending conferences. Workplace literacy instructors employed by Mt. Wachusett Community College are reportedly encouraged, but are not required, to attend in-service training that is available through the community college, Digital's training program, and the state department of education.

Summary

A number of findings about how projects operate at the study sites emerge from the site visits. These findings are organized by five topics: role of businesses and educational partners; methods to enhance participation; program planning, assessment, and evaluation; instructional services; and staffing.

Role of Workplace Literacy Project Partners

- Partners at the study sites, including businesses and unions, are generally supportive of and actively involved with workplace literacy projects. Most businesses provide classroom space. Both business and union partners assist in identifying and recruiting participants, and participate on project advisory panels.

- Although business sites are supportive of the respective workplace literacy projects, few indicated a commitment to continue the project without either Federal or other outside funding.

- Employees are involved with workplace literacy projects in varying ways. An advisory panel is frequently used by study sites to promote worker involvement.

- Supervisors are involved with the workplace literacy projects at many of the business sites. Initial reluctance of supervisors at many of these sites to have workers attend classes on company time has been eliminated as benefits from the project have become apparent.

- Educational providers at the study sites are directly responsible for all instruction-related activities, including conducting literacy task analyses, assessing the literacy skills of participants, developing instructional materials, and hiring and managing instructors.

Methods to Enhance Participation

- Study sites have generally not found it difficult to attract or retain participants.

- Partners at the study sites, including businesses and unions, are actively involved with recruiting participants by identifying potential participants. Projects also recruit participants through convening meetings of potential participants, distributing pamphlets, and placing notices about the program in pay envelopes.

- Most study sites did not conduct formal activities designed to promote retention. A number of project components may help to minimize retention problems. These include: locating instructional services at the work site, providing participants with monetary incentives, offering a supportive learning environment, and offering support services including child care, reimbursement for transportation, and counseling.

Program Planning, Assessment, and Evaluation

- Formal literacy task analyses as defined by the research literature are the exception rather than the rule at the study sites. Instead, most study sites conduct less formal analyses of literacy which involve observing workers on the job, meeting with workers and supervisors to discuss specific job responsibilities, and reviewing company manuals.

- Study sites do not generally conduct formal evaluations of their projects. Evaluations are generally based on anecdotal evidence, including the perceptions of instructors, business supervisors, and more senior staff.

- Study sites typically assess participant literacy levels through standardized instruments that are generally used for ABE programs and are not geared for workplace literacy.

Instructional Services

- Instructional services at all business sites are offered at the work site.

- The length of instructional cycles at the study sites ranges from six weeks at Grady Memorial Hospital to 20 weeks at Kennedy Die Castings. At most study sites, instructional services are provided twice per week.

- There is substantial variation from site to site in the total number of hours that are available per cycle. Hours of instruction provided each week range from one hour at the small businesses participating in DIRECTIONS to eight hours at Maryland Specialty Wire and Baltimore Tin Plate.

- Instructional services at the study sites are provided through both small-group and individualized instructional formats.

- At least some of the instructional materials at all study sites are related to the literacy requirements of the workplace. These include corporate manuals and procedures.

Staffing

- Almost all of the educational providers at the study sites have hired instructors who possess experience with ABE or ESL programs.

- Study sites generally do not report difficulty finding qualified applicants for the instructor positions.

- Most educational providers at the study sites do not provide training for instructors before instructional services begin. Most, however, offer in-service training for instructors and volunteers.

CHAPTER 4

CONCLUSIONS

The National Workplace Literacy Program (NWLP), administered by the U.S. Department of Education (ED), provides financial support to workplace literacy demonstration projects operated by partnerships of businesses, labor organizations, and educational institutions. The NWLP represents the major source of Federal funding for workplace literacy projects. Services provided through these workplace literacy projects include adult basic education (ABE); English-as-a-second-language (ESL); adult secondary education (ASE); training to update workers' skills and improve their competencies in speaking, listening, reasoning, and problem solving; and support services such as counseling, transportation assistance, and child care.

Thirty-seven projects were funded in the program's first year, FY 1988, and 39 projects were funded in FY 1989. The first-year projects involve business partners representing various industries including manufacturing (40 percent of the projects), electronics (32 percent), health care facilities (15 percent), hotel services (8 percent), and other industries (5 percent). Union organizations were partners at 27 percent of the projects.

Funding for the NWLP has more than doubled during the program's first four years -- from $9.6 million in FY 1988 to $19.3 million for FY 1991. If program appropriations reach $50 million, the NWLP will become a state grant program with funds distributed through the states on a formula basis, rather than directly to local projects by the Federal Government on a competitive basis.

This examination of projects funded during the NWLP's first year of operation -- including a review of the research literature, analyses of data from 29 of the 37 projects, and site visits to six projects -- provides information that:

- Identifies key components associated with effective workplace literacy projects; and
- Recommends ways to improve program effectiveness.

Components Associated with Effective Workplace Literacy Projects

Research on workplace literacy is limited to primarily descriptive studies that present the organization and content of existing projects. Although extensive empirical data are not available to document characteristics of effective workplace literacy projects, the available research provides a number of suggestions about components or elements that are likely to be associated with successful projects. Based on the research literature and information from site visits to six projects identified by ED staff as effective, four program components that appear to be associated with effective workplace literacy projects have been identified. However, empirical data to document that these components are essential for project success are not available.

Active Involvement by Project Partners Such as Businesses and Unions in Planning, Designing, and Operating the Project

Business and labor union partners at the study sites are generally supportive of and actively involved with workplace literacy projects. Partners at the study sites typically provide space for instruction, assist in identifying participants, and monitor program services. A number of the business partners also provide financial incentives for participants. The findings at the study sites are supported by the research literature which indicates that business and labor partners are involved with workplace literacy projects in these ways (National Alliance of Business, 1990; U.S. Department of Labor, 1988a; Fields et al., 1987).

Involvement by businesses at study sites consists of two areas: upper management and on-line supervisors. Upper management at the study sites are generally supportive of the projects. They are involved with designing the project, including developing specific project objectives, deciding the type of instructional and support services to be provided, arranging space for instructional services, and offering incentives to participants, through either release time or bonuses.

Supervisors at half of the study sites have direct and frequent contact with participants, and their responses to workplace literacy projects may have influenced whether participants continue in the project. Supervisor support is especially important when services are provided on company time and participants miss work time. At most of the business sites, supervisors are active participants in the workplace literacy project. At the five business sites where instructional services are at least partially provided on company time, supervisors have become convinced that employee participation has resulted in improved productivity, thereby increasing their support of the project.

Active union involvement (e.g., recruitment, support services, advisory committee) at the one study site with a union partner was a key component in that project's success. The important role that unions may have in workplace literacy projects as a result of their relationship with workers has also been cited in the research literature (Sarmiento & Kay, 1990; BCEL, 1987).

Active and Ongoing Involvement by Employees in Conducting Literacy Task Analyses and Determining Worker Literacy Levels

At most of the study sites, employees who are potential participants have an active and ongoing involvement with all aspects of the workplace literacy project. Employees at these sites have participated in planning the project, conducting literacy task analyses, and determining the literacy needs of workers. Advisory panels are another mechanism for worker involvement used by many of the study sites.

Employee input is important for several reasons. Supervisors are not aware of all skills that workers are lacking, and employees provide a different and necessary perspective on what is needed in literacy training. As one director at a study site states: "Students will succeed at what they feel they need." Another project administrator reports that worker involvement "solidifies the program; it makes classes more efficient, students more motivated, and enhances worker self-esteem and self-confidence."

Active and ongoing involvement by employees is also identified by the research literature as being associated with project success ("Bottom Line," 1988; BCEL, 1987).

Systematically Analyzing On-the-Job Literacy Requirements

Systematic analyses of on-the-job literacy requirements are known as literacy task analyses and include analyzing specific job responsibilities, skills required to accomplish the job, and written job materials. Some type of literacy task analysis was conducted at most of the study sites, although only one site conducted what was considered to be a formal literacy task analysis.

Sources of information for such analyses include observing workers on the job, reviewing manuals and written materials that are used on the job, interviewing employees, and interviewing supervisors. Information from these analyses has been used at the study sites to inform the design of instructional services.

Analyzing the literacy requirements of jobs is an essential component of workplace literacy projects according to the research literature (Askov et al., 1989; Carnevale et al., 1990a; Philippi, 1988). There is a concern, however, that the costs of conducting literacy task analyses may be prohibitive for small businesses (National Alliance of Business, 1990; "Bottom Line," 1988).

Developing Instructional Materials Related to Literacy Skills Required on the Job

At least some of the instructional materials at all study sites are related to job literacy requirements. Such materials include corporate manuals and instructions for operating machinery and other equipment. This is true at sites that did not conduct a literacy task analysis at the beginning of the project.

Researchers and practitioners emphasize the importance of using instructional materials that are related to the literacy skills required on the job (Carnevale et al., 1990a; Askov et al., 1989; "Bottom Line," 1988). These literacy skills may be specifically related to individual jobs, or almost any skill that is required to successfully perform the job.

Recommendations for Improving Program Effectiveness

The focus of this study has been on the projects funded during the NWLP's first year. The first year of any program is a difficult one with new procedures being developed and implemented. Start-up for the NWLP was further complicated by the short period between program enactment and operation. Yet information from the first-year projects indicates that the NWLP has already been successful in many areas. For example, the overall number of participants at the projects providing data for this study exceeded the number of participants that these projects expected to serve at the outset of the grant. The projects visited during this study contain many components that research studies indicate are associated with effective projects.

Based on information from the site visits and the research literature, five recommendations are offered that should result in improved program effectiveness.

Require Workplace Literacy Projects to Collect Data

The National Workplace Literacy Program has few data collection requirements. Projects are not required to submit quarterly progress reports that include data about participants and services. There are, however, at least three reasons why it is important for OVAE to collect data from workplace literacy projects. First, without appropriate data, OVAE staff are handicapped in providing sufficient technical assistance. Second, as a demonstration program, the NWLP projects need data to document promising practices or models that might benefit other workplace literacy projects. Third, projects need to have data documenting project success, especially quantifiable data related to on-the-job performance, in order to convince businesses of the value of providing financial support when Federal funding ends.

Data that projects should be required to collect include:

- Characteristics of participants, including race, gender, age, length of employment, beginning literacy levels, and extent literacy has improved.
- Project objectives that are related to job performance, including decreased absenteeism, increased productivity, fewer complaints, decreased expenditures for repairing inferior products, and improved self-esteem and confidence as they relate to job performance.
- Unduplicated count of participants, the number of instructional hours received, and the amount and type of support services and financial incentives received.
- Project revenues from the NWLP and other sources, including businesses, states, and in-kind contributions.
- Characteristics of instructors, including years of experience teaching adults.
- Hours and content of staff training.

Requiring the NWLP projects to collect data about participants and instructional services can be done in a non-burdensome manner, especially if projects design and implement a data collection system at the start of each grant cycle. Almost three-quarters of the first-year NWLP projects have provided extant data describing their participants and funding even though these data were not required by ED.

Lengthen the Grant Period

First-year NWLP projects were funded for 15 months and subsequent grants have been funded for a period of 18 months. Both time periods include a three-month start-up period. Consideration should be given to lengthening the NWLP grant period for two reasons.

First, activities required for successful workplace literacy projects are time-consuming as well as potentially expensive. Projects need to determine the literacy requirements of specific jobs through observing workers on the job, interviewing workers and supervisors, and reviewing work

materials. Also instructional materials as well as assessment instruments appropriate to specific job tasks need to be developed.

Second, the NWLP grants are for demonstration projects that might serve as examples for other workplace literacy projects. A 15- or 18-month time period may not be sufficient for projects to obtain sufficient data to document project success that may benefit other workplace literacy projects, or help convince businesses to provide financial support when Federal funding ends.

Develop Procedures for Disseminating Information about Successful Projects

The NWLP is the major Federal funding source of workplace literacy projects. The NWLP projects provide valuable information for other workplace literacy projects to draw upon in designing and operating their services. Therefore, procedures to systematically disseminate such information should be developed.

Projects funded through the NWLP include different types of businesses and educational organizations. Unions and private industry councils also participate in a number of the NWLP projects. Although instructional materials and assessment instruments should be customized for the specific requirements of the job, there is likely to be some portion of the NWLP materials and instruments that could benefit other projects serving similar jobs (e.g., hospital workers), and involving similar partners (e.g., unions, small businesses, private industry councils), and educational providers (e.g., community colleges, school districts, community-based organizations).

Require Projects to Evaluate Effectiveness

As previously mentioned, empirical data are needed to document promising practices or models that might benefit other workplace literacy projects and help convince businesses to provide financial support when Federal funding ends. It is important, therefore, for NWLP projects to be required to evaluate the effectiveness of their services. An evaluation of the NWLP can be designed in tandem with data collection requirements for the projects.

In addition to the usual issues addressed in an evaluation (i.e., impact of project services on participant literacy skills), information from the site visits and the research literature suggests additional areas that should be examined in an evaluation of the NWLP:

- **Essential elements of conducting literacy task analysis**. Data are not available to determine whether it is necessary to conduct a formal literacy task analysis. These can be quite expensive and it may not be realistic for small businesses and non-profit organizations to have such resources. In fact, three of the business sites that did not conduct a literacy task analysis are small businesses. A majority of the study sites conducted less formal literacy task analyses. What are the essential elements of literacy task analyses that even less formal analyses must include?

- **Appropriate length of instructional services**. At the six projects visited for this study, there is substantial variation in the number of instructional hours provided. With limited resources, workplace literacy projects may have to choose between providing a larger number of service hours and serving a larger number of

participants. How many hours of workplace literacy instruction are required for participant literacy levels to improve?

- **Influence on participant retention of support services, and monetary and other incentives to participants**. Two sets of project activities that might influence participant retention are the availability of support services such as child care assistance, education counseling, and transportation reimbursement, and monetary incentives. Six of the business sites offer such support services. Some type of financial incentives, such as paid release time and cash bonuses, are offered by seven of the business sites. Do support services and monetary incentives promote participant retention?

Support the Development of Instruments to Assess Participant Literacy Levels That are Geared for the Workplace

Standardized academic-based tests are used at most study sites to measure participant literacy levels and may also be used to evaluate projects. A systematic effort to develop instruments geared for the workplace that assess participant literacy levels needs to be undertaken.

Tests typically used at the study sites and also identified in the research as frequently used by workplace literacy projects include the Tests of Adult Basic Education (TABE), the Adult Basic Learning Examination (ABLE), and the Wide Range Achievement Test (WRAT) (Strumpf et al., 1989). Staff at a number of the study sites are concerned about the appropriateness of using standardized instruments for assessing literacy levels of participants. However, workplace literacy projects have almost no alternatives, since instruments designed specifically for the workplace generally do not exist. As one project director at a study site notes: "Measurement of participant progress is one of the toughest things we have grappled with."

The research literature voices the same concern about using standardized tests to assess participant abilities for workplace literacy projects (BCEL, 1987; Sticht & Mikulecky, 1984; Center for Applied Linguistics, 1983).

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APPENDIX A

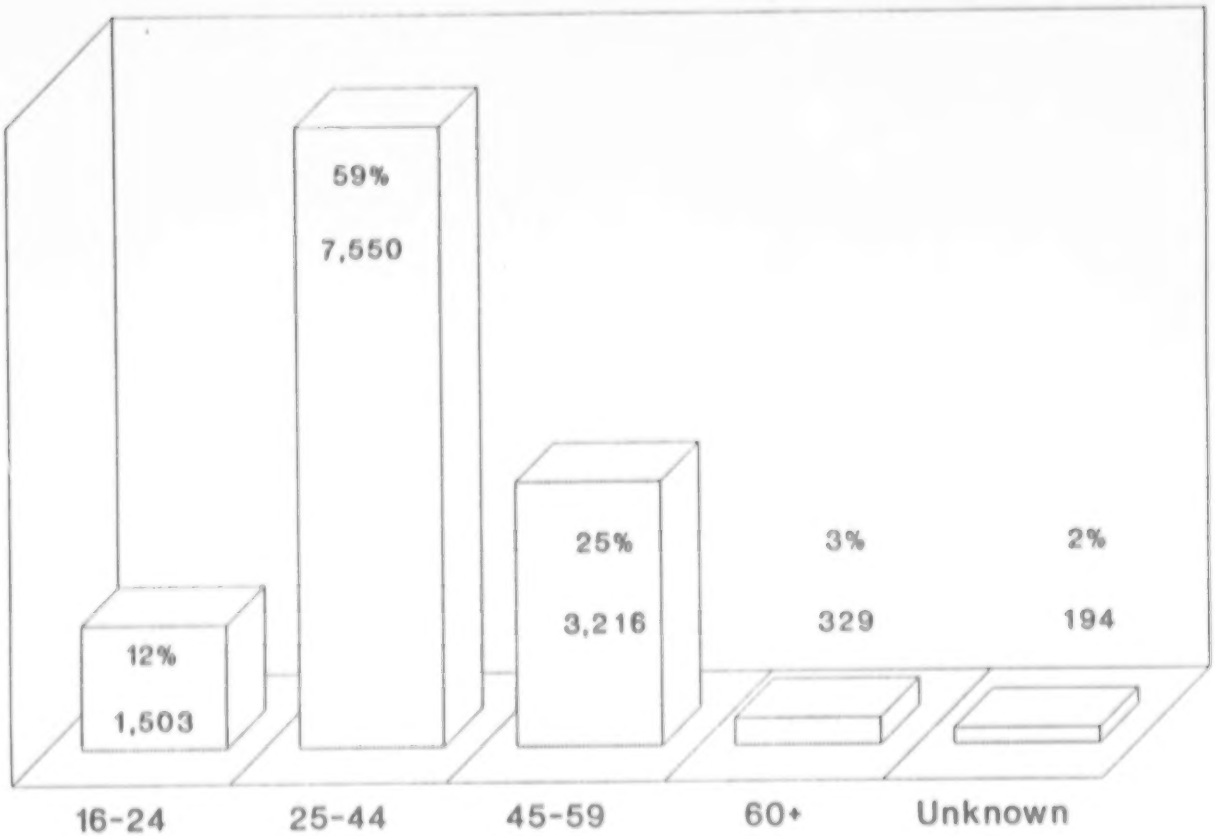
DATA ON FIRST-YEAR PROJECTS

CHARACTERISTICS OF PARTICIPANTS AT FIRST-YEAR WORKPLACE LITERACY PROJECTS*

Workplace Literacy Projects FY 1988	Total Females	% of Total	Total Males	% of Total	Native American	% of Total	Asian	% of Total	Black	% of Total	Hispanic	% of Total	White	% of Total
Arizona														
Pima County Adult Education	104	65%	57	35%	1	1%	29	18%	3	2%	82	51%	46	29%
California														
Los Angeles Unified School District	393	67%	191	33%	0	0%	51	9%	58	10%	434	74%	40	7%
Connecticut														
Greater Waterbury PIC	399	62%	249	38%	4	1%	11	2%	131	20%	70	11%	432	67%
Florida														
Orange County Public Schools	700	56%	539	44%	0	0%	144	12%	492	40%	451	36%	152	12%
Georgia														
Georgia State University	55	83%	11	17%	0	0%	0	0%	66	100%	0	0%	0	0%
Hawaii														
University of Hawaii at Manoa	225	67%	113	33%	10	3%	303	90%	0	0%	3	1%	22	7%
Idaho														
Cavet	731	54%	617	46%	74	6%	25	2%	0	0%	240	19%	911	73%
Illinois														
Northwest Educational Cooperative	384	66%	195	34%	0	0%	37	6%	2	0%	513	88%	28	5%
Triton College	300	37%	516	63%	0	0%	1	3%	14	37%	5	13%	18	47%
Waubonsee Community College	187	69%	85	31%	0	0%	1	0%	0	0%	126	47%	143	53%
Kentucky														
Eastern Kentucky University	158	90%	17	10%	0	0%	0	0%	1	1%	0	0%	174	99%
Maryland														
MD St. Dept. ED/Metro.Balt.AFL-CIO	266	55%	220	45%	3	0%	15	2%	374	55%	54	8%	228	34%
Prince George's County Board of ED	134	34%	263	66%	0	0%	56	14%	210	53%	40	10%	91	23%
Massachusetts														
Cambodian Mutual Assistance Assoc.	28	49%	29	51%	0	0%	21	36%	2	3%	11	19%	24	41%
Community Action, Inc.	58	83%	12	17%	0	0%	20	29%	0	0%	17	24%	33	47%
Continuing Education Institute	86	80%	22	20%	0	0%	2	2%	60	56%	8	7%	38	35%
MA Workplace Education Initiative	274	44%	354	56%	2	0%	154	25%	22	4%	79	13%	371	59%
New Jersey														
State of New Jersey	487	53%	434	47%	0	0%	93	10%	173	19%	521	57%	134	15%
New York														
Long Island University	331	72%	128	28%	1	0%	36	8%	275	60%	78	17%	69	15%
North Carolina														
Fayetteville Technical Comm. College	329	48%	350	52%	27	4%	25	4%	280	41%	19	3%	328	48%
Pennsylvania														
PA Department of Education	2	3%	66	97%	0	0%	1	1%	14	21%	3	4%	50	74%
Tennessee														
Maury County Schools	70	46%	81	54%	0	0%	0	0%	19	13%	0	0%	133	88%
Texas														
Houston Community College	339	95%	18	5%	0	0%	4	1%	215	60%	129	36%	9	3%
Virginia														
Arlington Public Schools/Reep Program	177	77%	54	23%	0	0%	34	15%	2	1%	192	84%	0	0%
James Madison University	102	62%	62	38%	1	1%	2	1%	1	1%	8	5%	152	93%
Washington														
Seattle King County PIC	109	74%	38	26%	0	0%	137	91%	1	1%	9	6%	3	2%
West Virginia														
WV Northern Community College	615	25%	1,844	75%	0	0%	22	1%	103	4%	3	0%	2,331	95%
TOTAL	7,043	52%	6,565	48%	123	1%	1,224	9%	2,518	20%	3,094	24%	5,960	46%

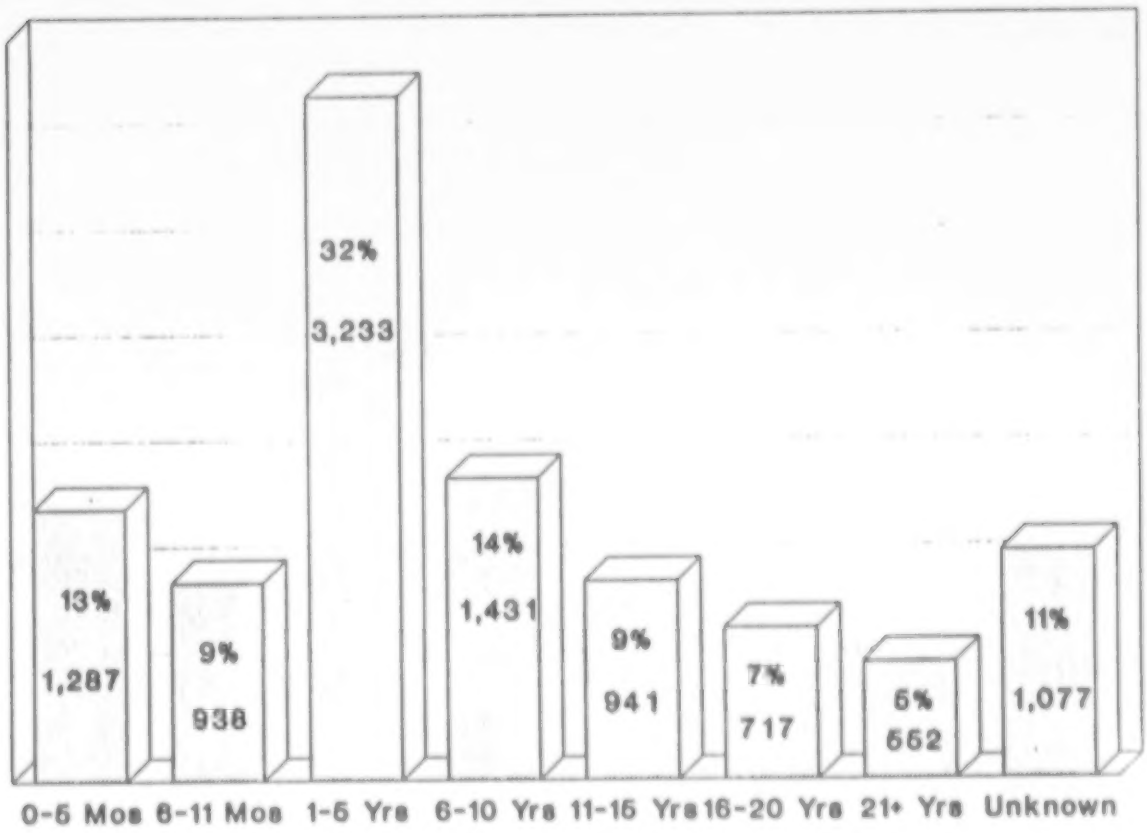
* Data reported by 27 projects.

AGE OF PARTICIPANTS



•Data reported by 27 projects.

LENGTH OF EMPLOYMENT*



*Data reported by 25 projects.